PROCEEDINGS

OF THE

MADRAS GOVERNMENT

IN THE

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH,

FOR THE

MONTH OF OCTOBER 1895.

Printed by Authority.

MADRAS:
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1895.

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

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1 Subjects.	2 Numbers and Dates of Proceedings.	3 Date of Report to Secretary of State for India.	4 Numbers and Dates of previous Proceedings.
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1 Subjects.	2 Numbers and Dates of Proceedings.	3 Date of Report to Secretary of State for India.	4 Numbers and Dates of previous Proceedings.
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The above forwarded to the Government of India.	31st Oct., No. 906 I.	...	......

No. 806 I., 1st October 1895.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers:—

From C. H. T. NORFOR, Esq., Superintending Engineer, III Circle, to the Chief Engineer for Irrigation, No. 1525, dated Bellary, 20th August 1895.

I have the honour to forward, for early sanction, a revised plan and estimate, for constructing a drop at the end of the division, Dasanur channel, sanctioned in G.O. No. 665 I., dated 12th September 1894.

The report accompanying shows the necessity for the work. The original estimate allowed a regulating dam; but what is wanted is a drop for reasons stated in the report.

Enclosure.

Report to accompany the estimate for constructing a drop at 5th mile of Dasanur channel.

	RS.
Estimate	600

In the sanctioned estimate provision was made for a regulating dam at end of new channel to connect it with the old. This was perfectly useless without a drop as the difference between the bed of the new and old channels is about eight feet in a distance of 1,100 feet; hence the necessity for the preparation of this estimate.

(Signed) J. F. SOMERS-EVE,
Executive Engineer.

No. 171 I.

Submitted to Government with a revised plan and estimate prepared in this office for the proposed work. The revised estimate amounts to Rs. 570.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

23rd Sept. 1895.

Order—No. 806 I., dated 1st October 1895.

The following estimate is sanctioned:—

Irrigation.
43. Minor Works and Navigation.
Minor works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Bellary Division.
Original Works.

		RS.
Constructing a drop at 5th mile of Dasanur channel, estimate	...	570

2. This sanction is registered as No. 108 I. of 1895–96.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, III Circle, with revised plan and estimate (6).
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 1st.

Recd. *Encl.*

G.O. No. 806 I., 1st October 1895.

OCTOBER.

Dasanur Channel

Estimate of Rs. 570 for constructing a drop at 5th mile of —, Bellary division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper :—

From N. F. MACKENZIE, Esq., Under Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Secretary to the Government of Madras, Public Works Department, No. 229 I., dated Simla, the 13th September 1895.

I am directed to acknowledge receipt of the Proceedings of the Government of Madras, No. 623 I., dated the 8th August 1895, copy forwarded under your No. 624 I. of the same date, and, in reply, to communicate the sanction of the Government of India to the proposed further re-distribution of the amounts, under direct charges, of the estimate for the Buckingham Canal, in lieu of that sanctioned in Public Works Department letter No. 256 I., dated the 17th December 1894. With the present re-distribution, the amounts sanctioned by the Secretary of State for the canal under direct charges will stand as shown below :—

	Re-distribution sanctioned in P.W.D. letter No. 256 I., of 17th Dec. 1894.	Further re-distribution now sanctioned.
	RS.	RS.
Works	68,09,843	67,87,937
Establishment	16,25,945	16,20,907
Tools and plant (including loss by exchange).	1,78,212	2,05,156
Total ...	86,14,000	86,14,000

Order—No. 807 I., dated 2nd October 1895.

Communicated to the officers concerned for information.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 2nd.

Recd. *Encl.*

G.O. No. 807 I., 2nd Oct. 1895.

OCTOBER.

Buckingham Canal

Government of India sanction to the proposed further re-distribution of the amounts, under direct charges, of the estimate for the —, communicated to the officers concerned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers:—

Proceedings of the Board of Revenue (Land Revenue), dated 26th August 1895, Mis. No. 4269.

Read—the following papers:—

From the Chief Engineer for Irrigation, Tank Restoration Scheme, No. 896 T., dated 16th July 1895.

Reference on the above, dated 9th August 1895.

From the same officer, No. 974 T., dated 19th August 1895.

Resolution—dated 26th August 1895, Mis. No. 4269.

A copy of the remarks recorded by Mr. Winterbotham will be communicated to the Chief Engineer for Irrigation.

(True Extract.)

(Signed) L. M. WYNCH,
Secretary.

ENCLOSURE.

Remarks.

The amount of the estimate is Rs. 1,710, and the sum which it is proposed that the shrotriemdars should be called upon to contribute is Rs. 1,367.

I anticipate that it will be beyond their inclination or means to disburse so large a sum, and the following remarks may therefore be considered:—

	RS.
Improvements to existing escape	465

2. It is not the fault of the shrotriemdars that the money already spent on this new calingulah has not accomplished its object. I cannot help thinking that it would suffice simply to raise the crest of the calingulah 1·29 feet, supposing that to be the correct level as stated in the report, without altering its design. This would cost but a few rupees. As a fact I found the ryots had done this by erecting a temporary earthen bund upon the crest. The report does not explain why so radical and costly an alteration of the new work is necessary.

	RS.
Constructing three sluices	175
Do.	240
Do.	135
Total ...	550

3. As there is no ground-plan of the tank I cannot tell whether these sluices are to irrigate the shrotriem land or the Government land. From what I remember of the ayacut I do not think they can irrigate both. If they are for the shrotriem land the shrotriemdars may be allowed to dispense with them, and the existing contrivances may continue.

	RS.
Forming two banks on both sides of the surplus channel from the tank-escape to channel P	135
Constructing masonry dam at B	425
Clearing and deepening supply channel	30
Erecting bench marks	20

4. These four items should be carried out in any case at once. The shrotriemdars may be called upon to contribute. If they decline to do so, the question as to whether they can be compelled should be considered by the Collector, but the work should proceed as it is indispensable.

5. The strengthening of the tank-bund is not urgently required, but is doubtless desirable.

6. The estimate provides fully for all that is required, so far as I can see, but the amount may be reduced as above suggested.

22nd August 1895. (Signed) H. WINTERBOTHAM.

No. 172 I.

Note by the Chief Engineer for Irrigation.

The estimates for repairing the Meyyanur tank, as prepared in the Tank Restoration Scheme, are submitted for sanction.

2. The estimates were forwarded to the Board of Revenue in order that Mr. Winterbotham, the late Collector of Tanjore, might favour the Chief Engineer for Irrigation with his opinion whether provision had been made for all works according to the agreement arrived at in 1888 by the delegates of the British and Pudukkóttai Governments. From his reply it appears that this is the case.

3. Mr Winterbotham suggested that several items of the estimate, which in the opinion of the Chief Engineer for Irrigation are necessary, should be omitted because the shrotriemdarsmay not be inclined to pay so much money ; but to carry out these suggestions would mean that the tank would not be put into a state of efficient repair and further increased expenditure would be necessary within a few years.

4. The remark that "it is not the fault of the shrotriemdars that the money already spent on this new calingulah has not accomplished its object" is not understood. The shrotriemdars paid nothing for the work already done which, so far as it went, answered well. The work was never completed as, pending further investigation regarding levels, it was useless to raise it to the full height.

Ootacamund, 23rd Sept. 1895. (Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E., Chief Engineer for Irrigation.

Enclosure.

Report to accompany the estimate for repairing Meyyanur tank (No. 58 in the list of Minor Works, Public Works Department).

Meyyanur tank is situated near the southern boundary of Pattukóttai taluk at the tri-junction of Tanjore and Madura districts and the Pudukkóttai state. It has an ayacut of 288 acres, partly Government and partly shrotriem, and is supplied by a shallow stream called Pambar, which runs through the Pudukkóttai state. This stream, until a comparatively recent date, had no branches and the Meyyanur ryots received the whole of the supply into their tank.

2. In or about the year 1885, the lessee of Vissur (Pudukkóttai) raised a flood bank to the north and east of his lands to protect them from being scoured by the overflow from the Pambar, and in doing so excavated pits in a continuous line, thus forming a channel, which subsequently became the main course of the Pambar, and diverted that river from the Meyyanur tank. This diversion of the Pambar from the tank gave rise to disputes and in 1888 delegates of the British and Pudukkóttai Governments met and drew up an agreement, a copy of which is attached to this report.

3. The first condition agreed to by the delegates was—

(a) That the British authorities may construct a masonry floor 45 feet in length and 6 feet in breadth at the head of channel B in Pudukkóttai territory, the level of the masonry floor being the same as the present level of channel D supplying the Meyyanur tank as its head. To carry out this part of the agreement, it is proposed to construct a masonry wall, as shown on plan No. 2 with crest at + 24·75 or at the average level of the bed at the time the agreement was drawn up (*vide* sketch survey plan No. 1 which accompanied the agreement). To fix the level of the crest the level of the top of the proposed boundary stone with a serpent head cut on it and marked V on the sketch survey will be taken as + 24·81.

(b) The next condition is that the channel D may be straightened and deepened 1½ feet below the level of the masonry floor at head. The top width of the channel including slopes shall be 14 feet, but the channel should not be widened or interfered with in any other way. Provision has been made in the estimate for carrying out this condition.

(c) "That earth taken from deepening and widening the channel, as stated in para. 2 (of the agreement), shall be used in filling up and levelling the pits and breaches in the western side of the channel D and the head of the channel C." This condition will be given effect to when work is in progress.

(d) "That the waterspread of Meyyanur tank shall not extend into what may hereafter be defined as Pudukkóttai territory except as regards the supply channel." In letter No. 872, dated 30th March 1894, the supervisor in charge of No. 4 Party, Tank Restoration Scheme, reports that the crest of Meyyanur tank weir is at + 21·71 when the levels are reduced to the datum assigned to the bench mark on top of the boundary stone alluded to in clause (a). He further reports* that the crest of the weir can be raised to + 23·41 without submerging Pudukkóttai territory to a greater extent than is permitted by the terms of the agreement. In the estimate the F.T.L. has been fixed at + 23·00 or 1·29 feet higher than it now is. This raising of the existing weir does not mean that F.T.L. is proposed to be raised as the weir has never been built up to its full height pending a settlement of the disputes.

* In No. 783, dated 20th February 1894.

4. The other conditions of the agreement will be attended to when work is carried out, including the formation of the embankment mentioned in paragraph 12 of the agreement.

5. The tank bund, though sufficiently high, is barely 2 feet wide at top and will be given a top width of 4 feet and side slopes 1½ to 1 and 2 to 1 in front and rear. The bund will terminate in British territory.

6. *Sluices.*—Irrigation is being carried on by means of several palmyra sluices. This arrangement being unsatisfactory, it is proposed to construct a masonry sluice at cross section No. 50 and two stoneware pipe sluices at cross section Nos. 40 and 57, respectively, as per plans accompanying. Irrigation cannot be managed by a less number of sluices than three, which are accordingly provided for.

7. *Surplus works.*—The existing surplus weir was commenced some years ago, but as stated in paragraph 3 of the report, was never built to the full height. It will now be completed as per plan No. 3 and be provided with a rear concrete apron and retaining wall. The ends will be raised to 2 feet above M.W L. and the revetments repacked. The effective length after these alterations have been carried out, will be 160 feet which is sufficient to discharge the surplus with less than 1¼ feet head.

8. Of the 288 acres irrigated by the tank, 185 being shrotriem, the contribution to be paid by the shrotriemdars amounts to Rs. 1,367† and should be paid into the treasury before work is started.

† Including 24½ per cent. for establishment and tools and plant.

(Signed) F. W. ASHPITEL,
for Chief Engineer for Irrigation, T.R.S.

ORDER—No. 808 I., dated 2nd October 1895.

The following estimate is sanctioned, Rs. 1,367 of the proposed outlay being met by contributions from the shrotriemdars concerned :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue accounts are kept, P.W.D.
Tank Restoration Works.
Repairs.

	RS.
Repairing Meyyanur tank, estimate	1,710

2. This sanction is registered as No. 110 I. of 1895-96.

3. The attention of the Superintending Engineer, V Circle, is drawn to the fact that no contribution was collected from the shrotriemdars when the tank was last repaired.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation, with estimates and plans.
" Superintending Engineer, V Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 2nd.

Recd. *Encl.*

G.O. No. 808 I., 2nd Oct. 1895.

OCTOBER.

Meyyanur Tank

Estimate of Rs. 1,710 for repairing —, Tanjore district, sanctioned with remark, Rs. 1,367 of the proposed outlay being met by contributions from the shrotriemdars concerned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From Major W. L C. BADDELEY, R.E., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezwada, 8th August 1895, No. 321 N.L.

I have the honour to forward herewith for your approval and sanction of Government, an estimate amounting to Rs. 3,700 for "Improvements to Rapur Dabala tank", Nellore district.

2. As regards the revenue information, &c., of the tank, a copy of Executive Engineer's letter No. 219 S.E., dated 27th July 1895, is sent herewith.

3. The report which accompanies the estimate explains the necessity for the work.

ENCLOSURE.

REPORT to accompany plans and estimates for improvements to Rapur Dabala tank, II Circle.

	RS.
Amount of estimate	3,580
No. 170 of Imperial list of tanks.	
	ACS.
Ayacut	278
	RS.
Assessment	1,330

This is an upper tank of Rapur large tank group. It receives the supply from a hill stream, which after filling this tank passes on through the Rapur Idula tank to the large tank.

This tank is mainly dependent on the supply above noted, which has already been calculated, when submitting the plans and estimates for the large tank. This is 1,747 cubic feet a second. The catchment area is only 0·5 square mile, and the discharge for this area (with coefficient 562·5) is 354 cubic feet a second. The total discharge to be provided for a surplus is, therefore, 2,101 cubic feet a second. The length of weir required for this discharge with 3 feet over crest is 130 feet. The tank has a weir 42 feet long. This is just near the end of the bank, where the supply channel branches off to the Idula and large tanks, and is not at all effective at such a point.

It is, however, proposed to allow it to stand and build a new weir at south end, which will be most effective in answering the necessary conditions for surplusing.

This tank has two sluices, one of which leaks badly. Both are proposed to be remodelled and supplied with screw-gearing shutters. A high level sluice is urgently wanted for the lands north-east of the tank, which is at present supplied through a vent in the old weir, and a new sluice has been proposed in consequence.

The tank is in bad order. The proposed works are for putting the whole in a thorough efficient order. The F.T.L. is the level of the existing weir.

(Signed) R. A. SRINIVASA AIYANGAR,
Executive Engineer, Nellore Division.

16th July 1895.

No. 173 I.

Submitted to Government. The amount of the estimate has been reduced in this office from Rs. 3,700 to Rs. 3,580 owing to errors found in the calculations for iron standards to the surplus weir of the tank.

2. It is hoped that the proposed improvements do not contemplate the blocking up of any byewash or continuing the bund beyond where natural ground level is at or about F.T.L.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

23rd Sept. 1895.

ORDER—No. 809 I., dated 3rd October 1895.

The following estimate is sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Nellore Division.
Original Works.

	RS.
Improvements to Rapur Dabala tank, No. 170, of list of works appended to G.O., No. 407 I., dated 6th July 1887, estimate ...	3,580

2. This sanction is registered as No. 109 I. of 1895-96.

3. The attention of the Superintending Engineer, II Circle, is drawn to paragraph 2 of the foregoing endorsement of the Chief Engineer for Irrigation.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle, with five enclosures,
" Examiner, Public Works Accounts,
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 3rd.

Recd. *Encl.*

G.O. No. 809 I., 3rd Oct. 1895.

OCTOBER.

Rapur Dabala Tank

Estimate of Rs. 3,580 for improvements to —, Nellore division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From A. H. Garrett, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, No. 1253 G.D., dated Dowlaishweram, 4th September 1895.

I have the honour to submit, herewith, the annual statements, parts I and II, together with the abstract for the irrigation and navigation floating plant for the ensuing official year 1896–97.

2. The probable cost of maintenance of floating plant for 1896–97 is estimated at Rs. 17,867, exclusive of the cost of upkeep of ferry ballacuts on different canals. The required funds will be applied for in the budget.

Enclosures.

Statement of the irrigation floating plant in the Gódávari district showing the estimated cost of upkeep during the year 1896–97.

Part I.—Steamers and steam dredgers.

Registered number.	Details of plant.		Value of plant.		Probable cost of upkeep in 1896–97.	Remarks.
	Description.	Names of steamers, &c.	Original.	Present book value.		
1	2	3	4	5	6	7
		Irrigation.	RS.	RS.	RS.	
	Steamer ..	" Shamrock "	20,014	6,790	860	In working order.
		" Arthur Cotton "	9,535	6,072	430	
		" Victoria "	50,956	16,415	910	
	Steam-tug ..	" John Mullins "	31,054	16,476	920	
		Total ..	..	..	3,120	
1	Dredger ..	Canal iron dredger, double bucket ladder, side delivery.	26,373	2,005	460	Boiler condemned.
2		Canal iron dredger, single bucket ladder, end delivery.	15,395	1,314	460	In working order.
3		Canal iron dredger, single bucket ladder, side delivery.	30,437	4,565	460	
4		Do. do. ..	30,437	4,836	460	
5		Do. do. ..	30,437	3,285	460	
6		Do. do. ..	31,097	4,662	460	In good working order, lately repaired.
		Priestman's size B ..	16,580	3,965	460	In working order.
		Do. A 1 ..	13,438	5,070	460	
		Do. A 2 ..	16,120	9,900	460	
		Total ..	..	..	4,140	
		Grand Total ..	..	..	7,260	

Rules for finding present book value.

(1) Steamers to be reduced 10 per cent. every year, and the amount of special repairs, if any, must be added thereto.
(2) Steam dredgers to be reduced 15 per cent. every year, and the amount of special repairs, if any, must be added thereto.

(Signed) W. JONES,
Boat Superintendent.

6th August 1895.

(Signed) A. G. ROMILLY,
Ex. Engineer, Head Works Sub-Divn.

(Signed) C. J. USSHER,
Ex. Engineer, Gódávari Eastern Divn.

STATEMENT of the irrigation floating plant in the Gódávari district showing the estimated cost of upkeep during the year 1896–97.

Part II.—Barges, Boats and Punts.

Registered Number.	Description of boats.	Value of plant. Original.	Value of plant. Present book value.	Probable cost of upkeep in 1896–97.	Remarks.
	Irrigation.	RS.	RS.	RS.	
1	Iron flat	6,243	1,683	140	In working order.
3	Canal iron punt	2,811	1,392	120	In good working order ; lately repaired.
5	Do.	2,812	1,418	120	In working order.
7	Do.	2,812	1,683	120	
10	Do.	2,812	1,154	120	Now working at Dumagudem.
11	Do.	2,812	1,262	120	
13	Iron dredge punt	2,310	1,118	75	In working order.
15	Canal iron punt	2,812	1,006	120	
17	Do.	2,812	1,846	120	
18	Iron dredge punt	2,310	629	75	
20	Canal iron punt	2,812	1,021	120	
21	Iron dredge punt	2,310	891	75	Under repairs.
22	Do.	2,310	516	75	
25	Canal iron punt	2,811	1,161	120	In working order.
27	Do.	2,811	1,242	120	
30	Do.	2,811	1,442	120	
31	Do.	2,811	1,319	120	In good working order ; lately repaired.
34	Iron flat	4,693	1,867	130	Now working at Dumagudem.
36	Canal iron punt	2,812	914	120	In working order.
37	Do.	2,812	1,402	120	
38	Do.	2,812	1,233	120	In good working order ; lately repaired.
39	Do.	2,812	801	120	In working order.
40	Iron deep boat	4,693	2,323	190	
44	Wooden deep boat	2,330	2,275	170	In good working order ; lately repaired.
47	Do.	2,000	2,719	170	In working order.
48	Do.	2,000	2,512	170	
49	Do.	2,000	2,542	170	Under repairs.
50	Do.	2,117	1,943	170	In working order.
65	Iron light boat	1,000	751	70	
66	Do.	1,000	1,233	70	In good working order ; lately repaired.
67	Do.	1,000	833	70	In working order.
68	Do.	1,000	764	70	
69	Do.	1,000	792	70	
70	Do.	1,000	628	70	
71	Do.	1,433	765	70	
72	Do.	1,433	710	70	In good working order ; lately repaired.
74	Do.	1,000	728	70	In working order.
75	Do.	1,000	693	70	In good working order ; lately repaired.
77	Wooden light boat	750	495	75	In working order.
81	Iron flat	7,375	1,832	140	In good working order ; lately repaired.
82	Wooden flat	2,722	1,975	150	
83	Do.	2,722	2,254	150	
84	Do.	2,722	2,030	150	
85	Do.	2,722	2,028	150	In working order.
86	Do.	2,722	2,407	150	In good working order ; lately repaired.
87	Do.	2,722	1,736	150	In working order.
88	Do.	2,800	1,928	150	
89	Do.	2,800	1,989	150	Now working at Dumagudem.
90	Do.	2,800	1,730	150	In good working order ; lately repaired.
91	Do.	2,800	2,583	150	
92	Do.	2,800	1,759	150	
93	Do.	2,800	1,740	150	In working order.
94	Do.	2,405	1,694	130	
95	Do.	2,405	1.998	130	
99	Do.	2,405	2,141	130	
100	Iron double trap punt	4,185	1,158	110	
101	Do. do.	4,185	1,342	110	
104	Do. do.	4,060	1,454	110	
105	Iron punt	6,960	3,010	140	
12	Second-class staff boat	820	..	150	
13	Do. do.	820	..	150	
14	First-class staff boat	1,400	..	230	
15	Second-class staff boat	800	..	150	
16	First-class staff boat	1,250	..	230	
17	Second-class staff boat	850	..	150	
18	First-class staff boat	1,400	..	230	
19	Second-class staff boat	850	..	150	
20	First-class staff boat	1,400	..	230	
21	Second-class staff boat	840	..	150	
22	First-class staff boat	1,783	894	230	
23	Second-class staff boat	1,780	1,336	230	
	Total ..	..	..	9,385	

Statement of the irrigation floating plant in the Gódávari district showing the estimated cost of upkeep during the year 1896–97—*cont.*

Part II.—Barges, Boats and Punts—cont.

Registered Number.	Description of boats.	Value of plant. Original	Value of plant. Present book value.	Probable cost of upkeep in 1896–97.	Remarks.
	Irrigation—cont.	RS	RS.	RS.	
A	Upper Gódávari barge	3,500	4,829	340	In working order.
D	Do.	3,500	3,888	340	
E	Do.	3,500	4,536	340	
	Total ..	..	..	1,020	
2	Jolly boat	165	160	20	In good working order; lately repaired.
3	Do.	340	233	16	
4	Do.	165	173	20	
5	Do.	Unknown.	..	16	
6	Survey Nava	300	190	35	In working order.
7	Do.	300	146	35	
8	Jolly boat of steam-tug "John Mullins."	Unknown.	..	60	In good working order; lately repaired.
	Total ..	..	..	202	
	Grand Total ..	..	..	10,607	

Rules for finding present book value.

(1) Boats and barges to be reduced 10 per cent. every year, and the amount of special repairs, if any, must be added thereto.

(2) Staff boats to be reduced by one-twelfth of their original cost for each year of their life.

6th August 1895.

(Signed) W. JONES,
Boat Superintendent.

Detailed approximate estimate of the annual cost of maintenance of the irrigation floating plant, Gódávari district.

Particulars.	Steamer "Shamrock."	Steamer "Victoria."	Steam launch "Arthur-Cotton."	Steam-tug "John Mullins."	Canal dredgers.	Barges.	Canal punts.	Dredge punts, 30 feet long.	Wooden light boats.	Iron light boats.	Wooden flats, 74 feet long.	Staff boats, first class.	Staff boats, second class.	Iron deep boats.	Iron flats Nos. 1 and 81 and iron punt No. 105.	Jolly boat No. 8.	Double trap punts.	Wooden flats, 60 feet 3 inches long.	Iron flat, 60½ feet long.	Wooden deep boats.	Jolly boats Nos. 2 and 4.	Jolly boats Nos. 3 and 5.	Survey Navas.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Docking and launching ..	50	50	50	50	50	25	12	10	10	10	15	10	10	30	15	5	12	15	12	25	..	..	5
Painting	500	500	195	550	120	150	31	20	..	20	..	110	65	63	45	30	30	..	35	..	8	..	..
Caulking	70	44	18	80	50	30	36	20	40	10	110	40	33	20	36	18	30	90	40	99	8	12	24
Varnishing	..	20	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..
Tarring	..	..	..	..	50	50	20	10	..	10	..	..	..	27	19	..	20	..	20	..	..	..	..
Ropes, &c.	30	30	30	30	30	58	11	10	20	10	14	10	12	37	14	2	10	14	15	34	4	4	6
Lascars	..	..	..	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Small stores	..	..	..	..	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
General charges	60	66	37	60	28	27	10	5	5	10	11	20	10	13	11	5	8	11	8	12	..	..	..
Sundry repairs	150	200	100	150	100	..	..	..	..	..	..	30	20	..	..	..	..	..	..	..	..	..	..
Total ..	860	910	430	920	460	340	120	75	75	70	150	230	150	190	140	60	110	130	130	170	20	16	35

9th August 1895.

(Signed) A. G. ROMILLY,
Ex. Engineer, Head Works Sub-Division.

(Signed) C. J. USSHER,
Ex. Engineer, Gódávari Eastern Division.

No. 810 I., 3rd October 1895.

Abstract showing the comparison of details between the estimated maintenance cost of floating plant in the Gódávari district for 1895–96 and 1896–97.

—	Number.		Original value.		Book value.		Cost of upkeep.	
	1896–97.	1895–96.	1896–97.	1895–96.	1896–97.	1895–96.	1896–97.	1895–96.
			RS.	RS.	RS.	RS.	RS.	RS.
Steamers	4	4	1,11,559	1,11,559	45,753	50,544	3,120	3,120
Dredgers	9	9	2,10,314	2,10,314	39,602	45,781	4,140	4,140
Barges A. D. and E., from Upper Gódávari works	3	3	10,500	10,500	13,253	14,725	1,020	1,020
Iron flats Nos. 1, 34 and 81 ..	3	3	18,311	18,311	5,382	5,469	410	410
Iron punts Nos. 3, 5, 7, 10, 11, 15, 17, 20, 25, 27, 30, 31, 36, 37, 38, 39 and 105	17	17	51,947	51,947	23,306	23,968	2,060	2,060
Iron dredge punts Nos. 13, 18, 21 and 22	4	4	9,240	9,240	3,154	3,503	300	300
Iron double trap punts Nos. 100, 101 and 104	3	3	12,430	12,430	3,954	4,392	330	330
Iron deep boat No. 40 ..	1	1	4,693	4,693	2,323	2,581	190	190
Iron light boats Nos. 65 to 72, 74 and 75	10	10	10,866	10,866	7,897	7,703	700	700
Wooden deep boats Nos. 44, 47 to 50	5	5	10,447	10,447	11,991	12,933	850	850
Wooden light boat No. 77 ..	1	1	750	750	495	550	75	75
Wooden flats Nos. 82 to 95 and 99	15	15	40,347	40,347	29,992	29,910	2,190	2,190
Staff boats, 1st class, Nos. 14, 16, 18, 20, 22 and 23	6	6	9,013	9,013	2,230	2,654	1,380	1,380
Staff boats, 2nd class, Nos. 12, 13, 15, 17, 19 and 21 ..	6	6	4,980	4,980	..	70	900	900
Jolly boats and survey navas Nos. 2 to 8	7	7	1,270	1,270	902	953	202	202
Total ..	94	94	5,06,667	5,06,667	1,90,234	2,05,736	17,867	17,867

(Signed) C. J. USSHER,
Ex. Engineer, Gódávari Eastern Divn.

Order—No. 810 I., dated 3rd October 1895.

The estimate of the cost of upkeep of the floating plant of the Gódávari delta system is approved; Rs. 17,867 will be provided on this account in the budget estimates for "Major works" for 1896–97.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 3rd.

Recd. *Encl.*

G.O. No. 810 I., 3rd Oct. 1895.

OCTOBER.

Floating Plant of the Godavari Delta System

Approving the estimate of the cost of upkeep of the — and directing that Rupees 17,867 be provided on this account in the budget estimates for "Major works" for 1896–97.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper : —

From A. S. RUSSELL, Esq., Officiating Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, No. 389 N.L., dated Bezwada, 17th September 1895.

I have the honour to forward, herewith, for your approval and sanction of Government under "Open capital account" a revised estimate, amounting to Rs. 1,150, for drainage culvert at 370 feet of Southern channel, a distributary of Kanigiri canal, Sangam anicut system.

2. The original estimate, amounting to Rs. 1,000, was sanctioned by me under 1. Extensions and Improvements.

3. The report which accompanies the estimate explains the necessity.

ENCLOSURE.

REPORT to accompany the revised estimate for the drainage culvert at 370 feet, Southern channel, a distributary of Kanigiri canal.

	RS.
Amount of original estimate	1,000
Amount of revised estimate	1,150

The provision for excavation and filling in and baling in the original estimate was quite insufficient. The revised estimate provides for the expenditure actually incurred on those sub-heads.

(Signed) R. A. SRINIVASA AIYANGAR,
Executive Engineer.

24th July 1895.

ORDER—No. 812 I., dated 3rd October 1895.

The following revised estimate is sanctioned in lieu of the estimate of Rs. 1,000 sanctioned by the Superintending Engineer under "42. Major Works (Working Expenses—Extensions and Improvements)":—

Capital Expenditure not charged to Revenue.
49. Irrigation.
Sangam Anicut System.
Open Capital Account.
4. Drainage and Protective Works.
2. Works.
Kanigiri Canal.
Southern Channel.
Unremunerative Work.
Constructing a drainage culvert at 370 feet.

	RS.
I. Works	1,150
II. Establishment	265
III. Tools and plant	5
Total estimate ...	1,420

2. This sanction is registered as No. 111 I. of 1895-96 and will expire on 31st March 1896.

3. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

[Here enter No. 813 I., dated 3rd October 1895.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle, with one enclosure.
" Examiner, Public Works Accounts.
" Revenue Department.

Endorsement—No. 813 I., dated 3rd October 1895.

Forwarded.

(By order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Secretary to the Government of India,
Public Works Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 3rd.

Recd. *Encl.*

G.O. Nos. 812, 813 I., 3rd Oct. 1895.

OCTOBER.

Sangam Anicut System

Forwarding Proceedings sanctioning a revised estimate of Rs. 1,420 for constructing a drainage culvert at 370 feet of Southern channel, Kanigiri canal, —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From W. HUGHES, Esq., Superintending Engineer, VI Circle, to the Chief Engineer, Public Works Department, No. 572 M.D., dated Trichinopoly, 1st October 1895.

I have the honour to submit, for sanction of Government, the following extract from the completion statements of the Madura division for the months of February, April and June 1895, regarding works of the Periyár project :—

Item No.	Name of work.	Amount of estimate.	Authority sanctioning the estimate.	Outlay.	Excess over estimate.
		RS.		RS.	RS.
1	Constructing No. 4 Fall at 4 furlongs and 260 feet in the 10th Branch channel	520	Superintending Engineer's Register No. 116 of 1893–94.	577	57
2	Constructing a rest-house at Pulipatty, 11th Reach, main channel.	2,150	Superintending Engineer's Register No. 144 of 1893–94.	2,487	337
3	Constructing two sluices attached to Fall No. 3 at 4 furlongs 330 feet, Kunnathore offtake, 9th Branch channel.	270	Superintending Engineer's Register No. 177 of 1893–94.	325	55
4	Superpassage No. 3 at 3 miles 6 furlongs, 10th Branch channel.	1,240	Superintending Engineer's Register No. 99 of 1894–95.	1,294	54

2. The completion statements and reports have been duly verified by the Examiner of Public Works Accounts, Madras.

Order—No. 815 I., dated 5th October 1895.

The Examiner of Public Works Accounts is authorized to pass the outlay incurred on the works referred to, the excess expenditure of Rs. 503 being met from the balance of the amount reserved for unforeseen works of the Periyár project, which will then be reduced to Rs. 904.

2. This sanction is registered as No. 112 I. of 1895–96.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, VI Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 5th.

Recd. *Encl.*

G.O. No. 815 I., 5th Oct. 1895.

OCTOBER.

Excess Expenditure

The Examiner authorized to pass the — of Rs. 503 incurred on certain works of the Periyár project in Madura division, during the months of February, April and June 1895.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From A. S. Russell, Esq., Offg. Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, No. 219 B.C., dated Bezwada, 20th September 1895.

I have the honour to forward herewith, for your approval and sanction of Government, statement of floating plant in the Buckingham Canal division, for 1896–97.

2. The probable cost of upkeep has been estimated at only Rs. 550 against Rs. 600 for 1895–96. To this, Rs. 350 have also been added for the upkeep of ferry ballacuts and boats, against Rs. 550 last year.

Enclosures.

Detailed approximate estimate of the annual cost of manufacture of Irrigation Floating Plant, Buckingham Canal, for 1896–97.

Particulars.	Staff boat, 1st class, No. 10.	Staff boats, 2nd class Nos.			Travellers' boats Nos.		Punt with wooden ribs, No. 7.	Punts Nos.				25 Ferry boats.	2 Ballacuts.
		5	9	11	7	8		2	6	8	9		
Docking and launching	10	..	6	6	6	6	15	15	15	..	15	25	10
Caulking	5	..	10	10	20	20	15	15	15	..	15	50	20
Painting	35	..	10	10	20	20	5	5	5	..	5	50	4
Ropes, &c.	5	..	5	5	5	5	5	5	5	..	5	25	4
Dammering	5	..	5	5	5	5	5	5	5	..	5	50	6
Sundry repairs	10	..	14	14	14	14	25	15	15	..	5	100	6
Total ..	70	..	50	50	70	70	70	60	60	..	50	300	50

Abstract showing the comparison of details between estimated maintenance cost of Floating Plant in the Buckingham Canal Division for 1895–96 and 1896–97.

—	Number.		Original value.		Book value.		Cost of upkeep.		Remarks.
	1896–97.	1895–96.	1896–97.	1895–96.	1896–97.	1895–96.	1896–97.	1895–96.	
Staff boat, 1st class, No. 10.	1	1	1,742	1,742	1,307	1,492	70	50	
Do. 2nd class, Nos. 5 and 9.	1	2	900	1,890	831	846	50	160	Boat No. 5 is to be sold being unserviceable.
Do. 2nd class, No. 11.	1	1	1,250	1,250	1,146	1,250	50	..	
Travellers' boats Nos. 7 and 8.	2	2	1,400	1,400	704	820	140	140	
Punt with wooden ribs, No. 7.	1	1	1,870	1,870	— 187	..	70	50	
Punts Nos. 2, 6, 8 and 9.	3	4	5,892	7,856	1,188	2,368	170	200	Punt No. 8 is to be sold being unserviceable.
	9	11	13,054	16,008	4,989	6,778	550	600	
Ferry boats ..	25	34	..	..	..	..	300	350	
Ballacuts	2	2	..	..	..	..	50	50	

STATEMENT of the Irrigation Floating Plant in the Buckingham Canal Division showing the estimated cost of upkeep during the year 1896–97.

Part II (Barges, boats, Punts and Staff boats).

Register number.	Detail of plant. Description of boat.	Measurement of plant. Date of construction.	Length.	Breadth.	Depth.	Draft when loaded.	Tonnage according to navigation rules measurement.	Value of plant. Original.	Present book value.	Proposed cost of upkeep in 1896–97.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
								RS.	RS.	RS.	
2	Punt	..	..	..	..	..	..	1,964	396	60	Continually require repair, punts and boats being wooden, and therefore unsuitable for constant use in salt water unless hulls are copper-sheathed.
6	Do.	..	..	..	..	..	..	1,964	396	60	
7	Punt with wooden ribs ..	..	..	..	..	..	..	1,870	—187	70	
8*	Punt	..	..	..	..	..	..	1,964	396	..	
9	Do.	..	..	..	..	..	..	1,964	396	50	
10	Staff boat, 1st class ..	..	..	..	..	..	..	1,742	1,307	70	
5*	Do. 2nd class ..	..	..	..	..	..	..	990	163	..	
7	Travellers' boat ..	..	..	..	..	..	..	700	352	70	
8	Do. do. ..	..	..	..	..	..	..	700	352	70	
9	Staff boat, 2nd class ..	..	..	..	..	..	..	900	831	50	The hull has been copper-sheathed this year.
11	Do. do. ..	1895.	48′	6′ 4″	2′ 9″	..	14	1,250	1,146	50	
										550	
	Ferry boats and balla-cuts	..	..	..	..	..	..	..	..	350	
										900	

* To be disposed of being unserviceable.

Rules for finding present book value.

1. Boats and barges to be reduced 10 per cent. every year, and the amount of special repairs, if any, to be added thereto.
2. Staff boats to be reduced by one-twelfth of their original cost for each year of their life.

MADRAS,
12th September 1895.

(Signed) A. AYODHYARAMAYYA,
for Offg. Ex. Engr., Buckingham Canal.

ORDER—No. 818 I., dated 5th October 1895.

The estimate of the cost of upkeep of the floating plant of the Buckingham canal is approved; Rs. 900 will be provided on this account in the budget estimates for " Minor Works and Navigation " for 1896–97.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 5th.

Recd. *Encl.*

G.O. No. 818 I., 5th Oct. 1895.

OCTOBER.

Floating Plant of the Buckingham Canal

The estimate of the cost of upkeep of the ---, approved and Rs. 900 ordered to be provided on this account in the budget estimates for 1896-97.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

STATEMENT showing the surrenders and demands under Irrigation for the year 1895–96, IV Circle.

Division.	Item number.	Name of work.	Amount of estimate.	Number and date of sanction.	Outlay to end of 1894–95.	Outlay in the current year up to 31st July 1895.	Balance of estimate.	Existing grant for 1895–96.	Proposed Increase.	Proposed Decrease.	Revised or proposed grant.
1	2	3	4	5	6	7	8	9	10		11
		IRRIGATION AND NAVIGATION. *Works for which neither Capital not Revenue Accounts are kept.* Original Works.	RS.		RS.	RS.	RS.	RS.	RS.	RS.	RS.
West Coast.	13	Restoring the Enamakal dam.	9,600	G.O. No. 440 I., dated 8th June 1894.	4,168	2,663	2,769	5,500	..	4,450	1,050

REMARKS.—Rs. 4,450 is surrendered as the Cochin Sircar have contributed moiety of the estimated amount—*vide* G.O. No. 1418, Mis., dated 19th August 1894.

No. 204 I.

True extract forwarded to the Chief Engineer for Irrigation, with a request that he will be good enough to obtain the orders of Government to the surrender of grant shown in the above statement.

(Signed) J. HANNAN,
Supg. Engineer, IV Circle.

18th September 1895.

ORDER—No. 819 I., dated 5th October 1895.

The sum of Rs. 4,450, or Rs. 5,541 including establishment and tools and plant charges surrendered by the Superintending Engineer, IV Circle, is resumed and credited to the reserve under "43. Agricultural works—Repairs."

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, IV Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 5th.

Recd. *Encl.*

G.O. No. 819 I., 5th Oct. 1895.

OCTOBER.

Funds

The sum of Rs. 5,541 surrendered by the Superintending Engineer from the grant for restoring the Enamakal dam in West Coast division, resumed and credited to the reserve under "43. Agricultural works—Repairs."

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

No. 177 I.

Note by the Chief Engineer for Irrigation.

In furnishing the Examiner of Public Works Accounts with the financial results of irrigation works for which Capital and Revenue accounts are kept for fasli 1304 (1894–95), the Board of Revenue, in its Proceedings, No. 261, dated 16th August 1895 (Revenue Settlement, Land Records and Agriculture) intimated that, owing to the revision of settlement in the Trichinopoly district, the jamabandi of that part of the district which is irrigated by the Cauvery has not yet been completed and the preparation of the irrigation accounts has, in consequence, been retarded. In its subsequent Proceedings, No. 4690, Mis., dated 3rd September 1895, it is stated that complete figures for the Cauvery delta system will be furnished as soon as the accounts are received from the Tahsildar of the Trichinopoly taluk, which will be about the end of November next.

2. In his office-note, No. 3312 D/18, dated 25th September 1895, the Examiner of Public Works Accounts states that the fact of the receipt from the Board of Revenue of incomplete accounts of the Cauvery delta system was reported by him to the Accountant-General, Public Works Department, and in reply to a telegram inquiring whether the accounts for 1894–95 could be closed without the figures for the Cauvery delta system, Trichinopoly taluk, that officer answered in the negative. The Examiner, therefore, is unable to furnish the finance and administrative accounts until the complete figures are furnished by the Board of Revenue.

3. In the absence of the Examiner's accounts, the compilation of the Administration report of the Public Works Department, Irrigation Branch, for 1894–95, which is due with the Government of India on the 30th November, cannot be completed, and its submission would therefore be inevitably delayed.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
2nd October 1895. Chief Engineer for Irrigation.

ORDER—No. 820 I., dated 7th October 1895.

The anticipated unavoidable delay in the submission of the Administration report of the Public Works Department, Irrigation Branch, for 1894–95, is regrettable.

2. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

[Here enter No. 821 I., dated 7th October 1895.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

ENDORSEMENT—No. 821 I., dated 7th October 1895.

Forwarded.

(By order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Secretary to the Government of India,
Public Works Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 7th.

Recd. *Encl.*

G.O. Nos. 820, 821 I., 7th Oct. 1895.

OCTOBER.

Administration Report of the Public Works Department, Irrigation Branch

Forwarding Proceedings observing that the anticipated unavoidable delay in the submission of the — for 1894-95 is regrettable.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From H. E. CLERK, Esq., Executive Engineer, North Arcot Division, to the Superintending Engineer, IV Circle, No. 182/S.E., dated 27th June 1895.

I have the honour to forward, herewith, an estimate for making roadway and culvert and strengthening right bank of No. 2 Regulator at No. 2 Regulator, Cheyar main channel.

I consider the work proposed by the Sub-division officer as necessary, and I have ordered its execution in anticipation of sanction.

This estimate may be treated as supplemental to the estimate for No. 2 Regulator, Cheyar main channel, sanctioned in Register No. 148 of 1893–94 and the amount may be met from the provision for unforeseen works.

Enclosure.

Report to accompany an estimate for making roadway and strengthening right bank of No. 2 Regulator.

No. 2 Regulator below Naikenery of Chengadu, sanctioned in G.O., No. 855 I., dated 6th October 1893, is finished but, as shall be described, there is danger of the work being turned by destruction of the tank and when the tank is full, the road from Mimily and Nambedu to Chengadu and Anakavur, a prehistorical one, is blocked.

As shown in the accompanying levels and sketch-map, the right bank just below the regulator is very low, not being up to M.W.L. It would have been easy to prevent the water from running out of the tank by raising the road above, but there is a considerable drainage coming from the fields south-east of the work which the tank has a right to so both the right bank must be strengthened, raised and the road brought above M.F.L. To do this a culvert is required. As much of the work as possible was tried to be done from the estimate for the regulator, but that estimate is now found to be somewhat exceeded.

It is probable that the road devolves on the Public Works Department for restoration, as the Taluk Board may say "you raised the tank and want to improve its capacity. We don't care about the tank."

(Signed) S. AINLEY,
Sub-Divisional officer.

No. 131/E.I.

Copy submitted to the Chief Engineer for Irrigation with a request that he will be good enough to obtain the sanction of Government to the estimate. This should be treated as supplemental estimate for No. 2 Regulator, Cheyar main channel, sanctioned in G.O., No. 855 I., dated 6th October 1893.

(Signed) J. HANNAN,
Suptg. Engineer, IV Circle.

1st July 1895.

No. IV—50/N.A.

Returned to the Superintending Engineer, IV Circle, for resubmission after obtaining the approval of the President, Local Fund Board.

2. The width of roadway provided appears to be insufficient. Parapet walls should be provided as well as guard stones.

Madras,
8th July 1895.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

From H. E. CLERK, Esq., Executive Engineer, North Arcot Division, to the Superintending Engineer, IV Circle, No. 267/S E., dated 6th August 1895.

With reference to your No. 309/N.A., dated 20th June 1895, I have the honour to report that the road across No. 2 Regulator is a village road and is not kept by the Local Fund Board. The signature of the President does not, therefore, appear necessary.

Although it is necessary to keep open communications, the traffic is not heavy, and I regard the width provided considering the class of road ample. If you or the Chief Engineer think otherwise, please have the necessary alterations made in your office. Provision for small parapet walls and guard stones have now been made in the estimate.

No. 165 I.

Copy submitted to the Chief Engineer for Irrigation with reference to his endorsement No. IV—50/N.A., dated 8th July 1895 (herewith returned).

(Signed) J. HANNAN,
Suptg. Engineer, IV Circle.

10th August 1895.

No. 175 I.

Submitted to Government.

The amount of the estimate has been increased in this office from Rs. 220 to Rs. 230 owing to the proposed parapets of the culvert being raised two feet.

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Chief Engineer for Irrigation.

2nd October 1895.

ORDER—No. 822 I., dated 7th October 1895.

The following estimate is sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which Capital and Revenue Accounts are kept.
Cheyar Anicut System.
Capital Account.
2. Main Canals and Branches.
3. Regulators.
Making roadway and culvert and strengthening right bank of No. 2 Regulator.

	RS.
I. Works ...	230
II. Establishment ...	53
III. Tools and plant ...	7
Total, Estimate ...	290

2. This sanction is registered as No. 113 I. of 1895-96.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, IV Circle, with plan and estimate.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras

PUBLIC WORKS.

Dated October, 7th.

Recd. *Encl.*

G.O. No. 822 I., 7th Oct. 1895.

OCTOBER.

Cheyar Main Channel

Estimate of Rs. 290 for making roadway and culvert and strengthening right bank at No. 2 Regulator, —, North Arcot division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From Lieutenant-Colonel C. C. RAWSON, R.E., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, No. 210 E.I., dated 7th July 1895

Under India Code, volume I, chapter IX, paragraph 79, I have the honour to request that sanction may be accorded to the work "Constructing a syphon for Mathoor channel under Mohandanur channel," in Nannilam taluk, Tanjore division, as per enclosed plan and estimate of Rs. 535 being undertaken by this department.

2. The object and necessity for the proposed work is explained in the report attached to the estimate.

3. The interested ryots have already paid in Rs. 456 and the balance of estimate will be recovered before the work is put in hand.

ENCLOSURE.

REPORT to accompany the estimate for constructing a syphon for Mathoor channel under Mohandanur channel, Nattar left bank.

	RS.
Amount of estimate	590

This is a contribution work. The ryots concerned have deposited Rs. 456 into the Nannilam taluk treasury on 25th October 1894, towards the cost of this work.

(Signed) T. T. RAGHAVACHARIYAR,
Assistant Engineer.

Mathoor channel water, for the irrigation of 27 acres of Mathoor lands, is at present being taken across the Mohandanur channel (both branches of Nattar river) in a wooden trough. It does not work satisfactorily and the irrigation of the 27 acresis very defective. It is therefore proposed to construct a syphon under the Mohandanur channel for the Mathoor channel as per plans and estimate accompanying. The body of the syphon is of cast-iron pipe 12″ in diameter, which will be quite sufficient for passing on the required quantity of water for irrigating 27 acres.

2. The syphon is proposed to be built a little above where Mathoor channel at present joins the Mohandanur channel; and the pattadars will excavate a small channel from their (Mathoor) main channel to the syphon.

3. *Specification.*—Work will be done according to the standard specification.

(Signed) T. T. RAGHAVACHARIYAR,
Assistant Engineer.

13th June 1895.

No. 176 I.

Submitted to Government.

The amount of the estimate has been increased in this office from Rs. 535 to Rs. 590 owing to the substitution of a revised design for the proposed syphon.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

2nd October 1895.

Order—No. 823 I., dated 7th October 1895.

The execution by the Public Works Department of the work referred to is sanctioned.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, V Circle,
with three enclosures.
,, Examiner of Public Works Accounts.
,, Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 7th.

Recd. *Encl.*

G.O. No. 823 I., 7th Oct. 1895.

OCTOBER.

Syphon

The execution by the Public Works Department of the contribution work of constructing a — for Mathoor channel under Mohandanur channel, Tanjore division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

Statement showing the surrenders and demands under Imperial and Provincial Irrigation, 1895–96, IV Circle.

Division.	Item number.	Name of work.	Amount of estimate.	Number and date of sanction.	Outlay to end of March 1895.	Outlay in the current year up to end of August 1895.	Balance of estimate.	Existing grant for 1895–96.	Proposed increase or decrease.	Revised or proposed grant.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
			RS.	RS.	RS.	RS.	RS.		RS.	RS.	
		42. Major Works—Working Expenses.									
		Extensions and Improvements.									
	1	Lump sum	..	..	..	..	..	1,480	— 800	680	No sufficient estimates on hand to work out the grant; hence Rs. 800 surrendered.
		Maintenance and Repairs.									
	2	Lump sum	..	..	..	..	..	2,000	— 200	1,800	Do. do.
		49. Capital Expenditure not charged to Revenue.									
		Major Works.									
Salem.	3	Constructing surplus sluices in the weir of Barur tank.	3,400	No. 147 I. of 1894–95.	..	738	2,662	2,000	1,000	3,000	Additional grant required to complete work within the year.
		43. Minor Works and Navigation.									
		Works for which neither Capital nor Revenue Accounts are kept.									
		Agricultural Original Works.									
	4	Lump sum	..	..	..	107	..	200	— 100	100	Not required.
		Agricultural Repairs.									
	5	Lump sum	..	..	..	427	..	1,200	— 400	800	Not required as the Cauvery river margin has been transferred to the charge of the Coimbatore division.

No. 209 I.

Forwarded to the Chief Engineer for Irrigation with a request that he will be good enough to obtain the sanction of Government to the modifications of grants shown in the above statement.

(Signed) J. HANNAN,
Supg. Engineer, IV Circle.

27th September 1895.

No. 179 I.

Submitted to Government.

2. The sum of Rs. 1,000 surrendered from items 1 and 2 may be transferred to the Kistna Western division, where additional funds are required under "Maintenance and repairs"—*vide* Proceedings of Madras Government No. $\frac{739}{A}$ I., dated 12th September 1895.

3. There are no funds available to meet the demand for item 3.

4. The sum of Rs. 500 surrendered from items 4 and 5 may be credited to the reserve under "Agricultural works—Repairs."

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

3rd October 1895.

ORDER—No. 824 I., dated 8th October 1895.

The following transfers of funds are sanctioned :—

Irrigation.
42. Major Works (Working Expenses).

From Barur Tank Project. Salem Division.	RS.	RS.	*To* Kistna Delta System. Kistna Western Division.	RS.
Extensions and improvements ...	800		Maintenance and repairs	1,000
Maintenance and repairs ...	200		Establishment	230
		1,000		
Establishment		230		
Total ...		1,230	Total ...	1,230

Agricultural Works. Salem Division.		Agricultural Works. Reserve.	
Original works	100	Repairs	500
Repairs	400		
Total ...	500	Total ...	500

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" " " IV "
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 8th.

Recd. *Encl.*

G.O. No. 824 I., 8th Oct. 1895.

OCTOBER.

Funds

Certain transfers of — for works in Kistna Western division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From the Executive Engineer, Kistna Northern Division, to the Superintending Engineer, II Circle, No. 351 S.E., dated 20th September 1895.

In continuation of this office No. 347 S.E., dated 17th September 1895, I have the honour to request that additional allotments of Rs. 4,500 may at once be placed at my disposal under 43. Minor Works and Navigation, Irrigation and Navigation works for which Capital and Revenue accounts are not kept, for temporarily closing the breaches in the tanks in Bezwada taluk.

2. A further sum of not less than Rs. 12,000 will be required for restoring these tanks, closing the breaches and repairing and rebuilding the masonry works and repairing bunds, of which Rs. 4,000 will be required during the current financia year and the balance next year. Estimates will follow as soon as possible; meanwhile the work of ring-bunding breaches is being pushed as rapidly as possible.

3. If funds are not available from the reserve with Government, please transfer Rs. 4,500 from the sum of Rs. 10,120 provided for land compensation, Dondapad project, as no awards have been passed up to date and as there is no probability of the full amount being paid for before 31st March 1896.

No. 1350 K.S.

Submitted to the Chief Engineer for Irrigation for favour of early compliance.

(Signed) W. M. ELLIS, Captain, R.E.,
25th September 1895. *for* Superintending Engineer, II Circle.

ORDER—No. 825 I., dated 8th October 1895.

The following transfers of funds are sanctioned :—

Irrigation.
43. Minor Works and Navigation.

From Agricultural Works.		*To* Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D. Ordinary Works. Kistna Northern Division.	
	RS.		RS.
Reserve—			
Repairs	4,500	Repairs	4,500
Establishment	1,035	Establishment	1,035
Tools and plant	68	Tools and plant	68
Total ...	5,603	Total ...	5,603

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 8th.

Recd. *Encl.*

G.O. No. 825 I., 8th Oct. 1895.

OCTOBER.

Funds

Certain transfers of — for works in Kistna Northern division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

Application for re-appropriation of budget grants.

[Statement

APPLICATION for re-appropriation of budget grants.

Proposed new grant.									Proposed reductions.								
Depart-mental and service head.	Item number of budget.	Works.	Amount of esti-mate.	Outlay to end of previous year.	Original grant for current year.	Existing grant for current year.	Proposed increase.	Grant as now pro-posed.	Departmental and service head.	Item number of budget.	Works.	Amount of esti-mate.	Outlay to end of previous year.	Original grant for current year.	Existing grant for current year.	Proposed reduc-tion.	Amount at which grant for work will stand after reduction.
			RS.	RS.	RS.	RS.	RS.	RS.				RS.	RS.	RS.	RS.	RS.	RS.
43. Minor Works, Capital.	4	Demarcating land under the Kurnool-Cuddapah canal.	13,800	..	..	..	5,000	5,000	43. Minor works, Capital.	1	Remodelling the Sekrail Cuthwa, II section.	Not yet sanctioned.	..	2,500	2,500	2,500	..
									43. Minor works for which neither Capital nor Revenue accounts are kept. Original works, Major.	2	Thokapalli project—Preliminary expenses.	4,140	2,031	2,260	2,260	1,160	1,100
										3	Yerragundapaliem tank.—Improvements to—.	Not yet sanctioned.	..	2,500	2,000	1,000	1,000

Explanation of necessity for re appropriation.

Item 1.—Estimate revised and resubmitted for approval, but not yet sanctioned. As it will be too late to put the work in hand even if estimate is sanctioned later on in the year, it is therefore proposed for surrender to meet in part the demand for item 6.

Item 2.—Surrendered as the shed provided in the estimate for the resident subordinate is not to be constructed now, as no use can be found for it until there is some prospect of the work being begun. It would, if constructed, only deteriorate and be expensive to maintain, being a temporary building.

Item 3.—Estimate resubmitted for sanction, but not yet sanctioned; hence portion of grant surrendered.

Item 4.—Required to meet the probable expenditure on the work during the current year.

(Signed) D. McN. CAMPBELL, Lieut.-Col., R.E.,
Superintending Engineer, III Circle.

No. 2140.

Forwarded to the Chief Engineer for Irrigation for sanction, if approved.

4th October 1895.

(Signed) D. McN. CAMPBELL, Lieut.-Col., R.E.,
Superintending Engineer, III Circle.

Order—No. 826 I., dated 9th October 1895.

The following transfers of funds are sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Kurnool Division.

From			*To*	
Minor Works for which Capital and Revenue Accounts are kept. Cumbam Tank System. Capital Account.	RS.	RS.	Minor Works for which Capital and Revenue Accounts are kept. Kurnool-Cuddapah Canal. Capital Account.	RS.
Works	2,500		Works	5,000
Establishment	575		Establishment	1,150
		3,075		
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D. Ordinary Works.				
Major original works	2,160			
Establishment	497			
Tools and plant	32			
		2,689		
Agricultural Works. Reserve—				
Repairs	310			
Establishment	71			
Tools and plant	5			
		386		
Total ...		6,150	Total ..	6,150

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, III Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 9th.

Recd. *Encl.*

G.O. No. 826 I., 9th Oct. 1895.

OCTOBER.

Funds

Certain transfers of — for works in Kurnool division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

Telegram from the Government of India, Public Works Department, to the Joint Secretary to the Government of Madras, Public Works Department, Irrigation Branch, dated Simla, 1st October 1895, No. 68/A.I.

Your letter No. 739 I., dated 12th September. Additional grant of Rs. 90,000 under "49" sanctioned. If additional expenditure Rs. 73,000 were sanctioned under 42. Kistna delta what additional revenue may be anticipated therefrom?

ORDER—No. 827 I., dated 9th October 1895.

Communicated to the Superintending Engineer, II Circle, with reference to G.O. No. 739/A.I., dated 12th September 1895.

2. The additional grant of Rs. 90,000 sanctioned by the Government of India under "49. Capital Expenditure not charged to Revenue" is distributed as shown below:—

		RS.
Kistna Eastern division works	...	30,171
Do. Western do.	...	43,000
	Total ...	73,171
Establishment	...	16,829
	Total ...	90,000

3. The following deferred telegram will be sent:—

To the Superintending Engineer, II Circle.

"G.O. No. 739/A.I., dated 12th ultimo. Additional grant Rs. 90,000 under "49" sanctioned for Kistna delta. Please wire in communication with Collector if additional expenditure Rs. 73,000 were sanctioned under 42. Kistna delta what additional revenue may be anticipated therefrom?"

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 9th.

Recd. *Encl.*

G.O. No. 827 I., 9th Oct. 1895.

OCTOBER.

Kistna Delta System

Government of India telegram sanctioning an additional grant of Rs. 90,000 for the — under "49," and enquiring what additional revenue may be anticipated if an additional expenditure of Rs. 73,000 were sanctioned under "42," communicated to Superintending Engineer, II Circle, with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

Office-note from the Examiner, Public Works Accounts, No. 3451 D./B., dated Madras, 3rd October 1895.

Referring to G.O. No. 752 I., of 14th September 1895, I beg to point out that an estimate amounting to Rs. 1,150 has already been sanctioned in G.O. No. 454 I., dated 30th May 1895, from the provision of Rs. 2,000 made for item 592 in the abstract printed with G.O. No. 857 I., dated 11th October 1893, leaving a balance of Rs. 850 only, and this fact has apparently been lost sight of in the order under reference, wherein it is stated that the excess of Rs. 2,234 should be met from the provision of Rs. 2,000 made for item 592 *plus* Rs. 670 provided for item No. 518.

2. Out of the provision for these items, the actual amount now available is only Rs. 1,520. Please therefore state the source from which the further amount required, viz., Rs. 714, should be met, and arrange to issue the necessary erratum at an early date.

ORDER—No. 832 I., dated 12th October 1895.

The difference of Rs. 714 referred to will be met from the balance available for unforeseen works of the Kistna delta system, which will then be reduced to Rs. 11,878.

2. This sanction is registered as No. 114 I. of 1895–96.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 12*th*.

Recd. *Encl.*

G.O. No. 832 I., 12th Oct. 1895.

OCTOBER.

Funds

Sum of Rs. 714 required to make up the estimate of Rs. 10,124 for excavating the Potumerka channel, Kistna Western delta, ordered to be met from the balance available for unforeseen works of the Kistna delta system.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From N. F. MACKENZIE, Esq., Under Secretary to Government of India, Public Works Department (Civil Works—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 27th September 1895, No. 240 I.

I am directed to acknowledge the receipt of the Proceedings of the Government of Madras, No. 596 I., dated 31st July 1895, copy forwarded under your No. 597 I. of the same date, containing the sanction of the Local Government to an estimate, amounting to Rs. 13,800, for demarcating land under the Kurnool-Cuddapah canal, chargeable to the open Capital account of the canal under 43. Minor Works and Navigation, the work being classed as unremunerative.

2. With reference thereto, I am to point out that, as the works outlay amounts to Rs. 11,200, the sanction of the Government of India should have been obtained under the rules in Public Works Department Code, Vol. II, Chapter V, paragraph 35 V (*a*). I am, however, to communicate the formal sanction of the Government of India to the estimate in question.

3. The sanction accorded in paragraph 2 of this letter has been registered as No. 17 I. of 1895-96.

Order—No. 844 I., dated 16th October 1895.

Communicated to the officers concerned with reference to G.O. No. 596 I., dated 31st July 1895.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, III Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 16th.

Recd. *Encl.*

G.O. No. 844 I., 16th Oct. 1895.

OCTOBER.

Kurnool-Cuddapah Canal

Letter from the Government of India communicating, with remarks, the formal sanction of that Government to the estimate of Rs. 13,800 for demarcating land under the —, communicated to officers concerned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From J. N. ATKINSON, Esq., Collector of the Kistna District, to the Secretary to Government, Revenue Department, dated Bezwada, 20th September 1895, Dis. No. 234-Tour.

Referring to your telegram of 12th instant, inquiring whether any serious loss of life or much distress had been caused by the recent floods, and in continuation of my telegram of 13th instant, stating that up to that date three deaths had been reported, I have the honour to submit the following report.

2. Information as to the effect of the floods is very slow in coming in, though, in accordance with my instructions, Divisional officers and Tahsildars are touring through their respective charges and personally inquiring into the extent of damage and mortality caused. The following paragraphs summarise the information which I have received up to date.

3. In the Sub-Collector's division, in spite of the very heavy rain—upwards of 11 inches in twenty hours at one lock—no loss of life or immediate damage to property has been reported. A large area of wet crop has been completely submerged for several days, and it is likely that considerable remissions will be necessary at the next jamabandi. I have issued orders for a very careful inspection of these crops so soon as the floods have subsided. The Executive Engineer found it necessary to breach one or two channels to let off the floods; but there has not been any great damage to irrigation works. The unharvested cholum and sazza crops were much damaged. The Sub-Collector reports that there is no distress.

4. The Head Assistant Collector's division suffered more severely than any other part of the district. In the Nandigáma taluk a few minor irrigation tanks, and in the Munagala zamindari (under the Court of Wards) almost all the estate tanks breached. Efforts are being made to save the crops. In Bezwada taluk three deaths by drowning are reported from Kondapalli village, but I think it most likely that other unreported deaths must have occurred, seeing that the Budameru river, the principal agent of destruction in this district, passes through the centre of the taluk. A large number of major and minor *Government* tanks are fed by the Budameru, and the Head Assistant Collector reports that *all* of these are breached. The Executive Engineer, Northern Division, is now engaged doing all he can to save the crops under these tanks.

5. Information from the Nuzvid taluk is especially scanty. The Head Assistant Collector and Tahsildar are touring through the affected parts, and I expect full reports from them any day now. Postal and, indeed, all other communication with these parts is however much retarded owing to breaches in the East Coast Railway, the Ellore canal and all the roads. I learn that in Mirjapuram village, belonging to M.R.Ry. Venkata Narasimha Apparow, Zamindar of the Mirjapuram portion of the

old Nuzvid estate, 17 men, 23 women and 19 children, as well as 400 cattle were drowned and 100 houses destroyed, the total loss of property in this village alone being estimated at Rs. 15,000. In the neighbouring village of Kottapalle one woman and 200 sheep and goats are said to have been drowned, and twenty houses destroyed. The Mirjapuram zamindar is said to have done all in his power to relieve immediate distress in his estate. I have little doubt that there must have been further loss of life and property as yet unreported in this taluk.

Five more deaths by drowning have since been reported in the neighbouring village of Pallelamudi.

(Intld.) J. N. A.

6. An enormous amount of damage has been done in this taluk by the breaching of zamindari tanks. Government is aware that the question is now before it on what department the obligation should lie of preparing estimates for the repairs necessary to make these zamindari tanks safe. I respectfully submit that it would be advisable to appoint a special establishment at once for this purpose and get the tanks made safe without further delay. Some of them breach every year and it is quite possible that next month may bring a repetition of the present disasters.

7. In the head-quarter division the damage was confined to the Gudiváda taluk and resulted solely from the Budameru flood, which broke its way right across the taluk, breaching all the canals in its way. No loss of life, either human or other, has been reported. There are not many sheep and goats in the taluk, and at this season most of the cattle have been sent to the upland taluks, so that though it is likely that some cattle have been drowned, the numbers will not be large. I hear of a good many houses subsiding in the floods and straw stacks being washed away or damaged. The flood in the Kolleru lake has, of course, been very high. I think when the water levels are reported it will be found to be the highest flood on record. An enormous extent of paddy crop has been submerged in depth from 2 to 6 feet, and as we must expect the normal north-east monsoon floods next month before the present floods have had time to run off, it is likely that there will be a total failure of this paddy crop over a large area, say, 15,000 to 20,000 acres.

8. In the General Deputy Collector's division it is reported that there has been no loss of life nor any distress. The rain in Narasaraopet and Vinukonda taluks was less than elsewhere, but in Dáchépalle (Palnad taluk) nearly 10 inches were gauged in 24 hours, and I apprehend there must have been some damage to houses, tanks and roads.

9. None of my Divisional officers or Tahsildars have said anything about loss or damage to the stores of food grain. These are generally kept in pits in the ground, only the wealthier ryots possessing water-tight granaries above ground. The grain pits are on elevated ground, tank bunds, old village-sites and the like, so they may have been above water level. In any case I do not think there is the remotest likelihood of any actual deficiency of food grain. It is only the poorest classes who are likely to have lost their stores and these can now get work at high rates of wage in repairing the railways, canals and roads.

10. The prospective failure of the wet crops over so large an area is a more serious calamity. It has come so early in the year that in some localities, where the land is comparatively high, so that the flood waters have already drained off, and where paddy seedlings can now be procured, it is possible for the ryots at once to replant their fields with the usual six months' paddy. But the larger part of the affected area is low-lying, and the storm waters are stagnating therein or slowly draining away. It is impossible to prepare such land for transplantation till the superfluous water has drained off. It would be equally impossible now to find seedlings for the large area on which the first crop will have been lost. Three courses are open to the ryots, either to grow a later dry crop, or a three months' paddy crop, or to leave the lands waste. As to the first it has been frequently pointed out that land which has been irrigated for a series of years is unfit for the cultivation of dry cereals, cholum and sazza, nor have the ryots the necessary apparatus for such cultivation. There is nothing to prevent them raising a crop of pulses. To the second

course there is the objection that three months' paddy is almost unknown in this delta and that seed-grain or seedlings thereof are not procurable. To leave the land waste will entail not only the diminution of food supply next year, but also the withdrawal of their accustomed means of livelihood from thousands of field labourers at the next harvest season.

11. It has therefore been suggested to me that Government should intervene and purchase seed-grain of three months' paddy from other districts for distribution to the ryots. But again it is pointed out that in the affected tracts the soil generally is and will continue to be too much saturated for the raising of seedlings. Therefore it has been urged that if Government purchases seed-grain, it must arrange also for its sowing and rearing and that no good can be effected except by the distribution of seedlings.

12. I do not think this is a case for Government interference. To begin with it would be almost impossible for the Government officials in the district to arrange for the raising of so large a quantity of paddy seedlings. There is no land available; Government has no apparatus nor labour at command and no one skilled to supervise such an undertaking. The proposal is altogether unpractical and impracticable.

13. But besides this I do not think there is any necessity for Government interference at all. This is no case of prospective famine, of risk of mortality from want of food. I do not for a moment believe that those whose crops are lost will thereby be reduced to a condition of destitution next year. The ryots in the district are well to do. They generally have some capital saved in the form of jewelry or money hoards. If there be any who live absolutely from hand to mouth, they can find work for the next few months in repairing the railways and canals. After that there is the harvest season with its handsome wages, and there will be the Bezwada-Madras Railway.

14. Finally, I may point out that if any ryot wants to grow three months' paddy he can without difficulty procure the seed for himself and arrange to raise it in any suitable locality. It is not a case of emergency. The three months' crop may be sown any time before December, and there are therefore two months for the ryots to make the necessary arrangements. I do not consider therefore that there is any need for Government interference. I may add that the loss of crop would not have been anything like so large had it not been for the ryots' delay in commencing wet cultivation this year consequent on the agitation against the enhancement of the water-rate. Transplantation has been at least three weeks later than usual, and six weeks later than it need have been had the ryots taken water when first it was offered them in May.

15. I would respectfully urge Government to direct that measures be taken once for all to bring the Budameru floods under control. This little stream, with a catchment area of some 400 square miles, has been allowed hitherto to work annual havoc with life and property, public and private. The flood which has just occurred is nothing new or specially out of the way. I doubt if a year ever passes without the Budameru breaching the Ellore canal, while every six or eight years there comes a more than usually destructive flood wherein public and private property is sacrificed wholesale. We are accustomed to it in this district and think nothing of it; and this year too I doubt if public attention would have been drawn to the matter had not the railways suffered so heavily. Various schemes have been suggested from time to time for curbing or diverting the Budameru, and the Department of Public Works I believe has considered each of these in turn and for one reason or another condemned them all. But I cannot believe that at this latter end of the nineteenth century it passes the collective wit of the whole Engineering department to devise a scheme for regulating so small a stream. If it be a mere matter of expense, I submit that a very large expenditure would be more than justified and on this point it would be interesting to ascertain how much these Budameru floods have cost the State alone in repairs during the last thirty years.

16. I would add that one scheme that has been suggested is to divert the Budameru to empty itself into the Kistna by an old, though still existing mouth,

some 8 miles above the Bezwada anicut. Such a diversion would have the secondary though also very important effect of reducing the flood level in the Kolleru lake. Questions have been asked in the Legislative Council about Kolleru floods, and Government has called for information on the subject (G.O., No. 1018 I., dated 15th December 1894). The subject is an admittedly difficult one, but since every year more and more drainage water is poured into the Kolleru, the question will obtrude itself more and more. If therefore the Budameru could be diverted from flowing into the Kolleru, a considerable step would have been made towards solving a problem which bids fair hereafter to cause Government much trouble and expense.

17. Lastly, I venture on my own responsibility, having had no opportunity of specially consulting the Department of Public Works, to ask Government to treat this delta a little more liberally in the matter of allotment of funds. Improvement of drainage works is a matter of urgent necessity, but so small is the annual grant for the whole delta that the sum available for drainage works is altogether insignificant. "Ten years hence" writes one of the Executive Engineers to me "something may have been done towards draining the delta." This is not a matter to be lightly dealt with. The annual loss to Government and to the ryots owing to bad drainage would amount probably to some lakhs of rupees.

Mis. No. 3940, Revenue.

Transferred with Honourable Members' notes in original to the Public Works Department (Irrigation Branch).

(Signed) W. B. AYLING,
Ag. Asst. Secy. to Government.

1st October 1895.

Order—No. 845 I., dated 16th October 1895.

The attention of the Superintending Engineer, II Circle, is drawn to paragraph 15 of the Collector's letter and he is requested to report at an early date what measures are necessary to control floods in the Budameru.

2. The question raised in paragraph 6 of the Collector's letter is being dealt with by the Secretary to Government, Public Works Department.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
" Chief Engineer for Irrigation.
" Consulting Engineer for Railways.
" Public Works Department (General Branch).
" Revenue Department.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 16*th*.

Recd. *Encl.*

G.O. No. 845 I., 16th Oct. 1895.

OCTOBER.

Floods in the Kistna District

Directing the attention of the Superintending Engineer to paragraph 15 of the Collector's letter reporting on the late — and calling for an early report as to the measures necessary to control floods in the Budameru.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

Application to the Superintending Engineer, III Circle, for a re-appropriation of budget grants.

APPLICATION to the Superintending Engineer, III Circle, for a re-appropriation of budget grants.

Proposed new grant.									Proposed reduction.								
Departmental and service head.	Item number of budget.	Works.	Amount of estimate.	Outlay to end of previous year.	Original grant for current year.	Existing grant for current year.	Proposed increase.	Grant as now proposed.	Departmental and service head.	Item number of budget.	Works.	Amount of estimate.	Outlay to end of previous year.	Original grant for current year.	Existing grant for current year.	Proposed reduction.	Amount at which grant for work will stand after reduction.
											Kurnool Canal.			RS.	RS.	RS.	RS.
									42. Major works, Maintenance and Repairs.	1	Lump sum grant	..	..	72,000	72,000	2,000	69,000
									43. Minor works and Navigation, Original works, Major.	2	Yerragundapoliem tank improvements.	Not yet sanctioned.	..	2,500	1,000	1,000	..

Item 1.—In this office No. 2699, dated 26th September 1895, Rs. 5,000 were reported to be available for transfer from the maintenance grant of the canal to the work of demarcating the lands under the Kurnool-Cuddapah canal, but as the estimate for that work has since been sanctioned under 43. Minor Works, with reference to the rule contained in Code, paragraph 35 (VIII), Chapter V, Volume II, the proposed transfer could not be made. Of the above sum, *i.e.*, Rs. 5,000, Rs. 1,000 have since been transferred to Minor extensions and improvements to meet the demand under that head, and there remains Rs. 4,000 to be utilized. It is now proposed to utilize Rs. 2,000 out of it on special repairs and surrender the balance.

Item 2.—Estimate not yet sanctioned, and no prospect of work being put in hand till January next if sanctioned on account of presence of water in the tank: hence the surrender.

(Signed) J. F. SOMERS-EVE,
Executive Engineer.

No. 2963.

Forwarded to the Superintending Engineer, III Circle, with reference to his No. 2096, dated 1st October 1895.

(Signed) J. F. SOMERS-EVE,
Executive Engineer.

7th October 1895.

No. 2226.

Forwarded to the Chief Engineer for Irrigation for surrender if approved.

12th October 1895. (Signed) D. McN. CAMPBELL, Lieut.-Col., R.E.,
Suptg. Engineer, III Circle.

No. 187 I.

Submitted to Government.

The amount surrendered from item 1 may be transferred to the Kistna Western division where additional funds are required under Maintenance and repairs (*vide* G.O. No. $\frac{739}{A}$ I., dated 12th September 1895). The amount not required for item 2 may be credited to the reserve.

16th October 1895. (Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

ORDER—No. $\frac{845}{A}$ I., dated 16th October 1895.

The following transfers of funds are sanctioned :—

Irrigation.
42. Major Works (Working Expenses).

From Kurnool-Cuddapah Canal. Kurnool Division.	RS.	*To* Kistna Delta System. Kistna Western Division.	RS.
Maintenance and repairs	2,000	Maintenance and repairs	2,000
Establishment	460	Establishment	460
Total ...	2,460	Total ...	2,460

Irrigation.
43. Minor Works and Navigation.

From Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D. Ordinary Works. Kurnool Division.	RS.	*To* Agricultural Works. Reserve.	RS.
Major Original works	1,000	Repairs	1,000
Establishment	230	Establishment	230
Tools and Plant	15	Tools and Plant	15
Total ...	1,245	Total ...	1,245

2. The following deferred telegram will be sent to the Superintending Engineer, II Circle :—

"Additional grant Rs. 2,000 sanctioned under 42. Maintenance and Repairs for Kistna Western division."

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle, in MS.
" " " III "
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 16th.

Recd. *Encl.*

G.O. No. $\frac{845}{A}$ I., 16th Oct. 1895.

OCTOBER.

Funds

A re-appropriation of — for works in Kistna Western division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From N. F. MACKENZIE, Esq., Under Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, the 25th September 1895, No. 239 I.

I am directed to invite your attention to the irregularities in connection with the works enumerated in the accompanying copy of a statement (which has been furnished by the Accountant-General, Public Works Department), of objectionable items remaining unremedied in the accounts of the Irrigation Branch, Madras, to end of April 1895, and to request that early steps may be taken to regularize the various items in question.

Enclosure.

MADRAS—PROVINCE.

Extract from the statement of objectionable items in the accounts of Executive Engineers remaining unremedied to end of April 1895.

Division.	Name of work.	Month in the accounts of which objectionable expenditure first appeared.	Number of item.	Amount of estimate.	Excess expenditure. During month.	Excess expenditure. To end of month.	Remarks.
	35. Construction of Protective Irrigation Works—Imperial.			RS.	RS.	RS.	
	No Estimate.						
Rushikulya division ..	No. 13 Distributary, Rushikulya canal	September 1894 ..	1	..	834	2,893	Sanction to estimate still awaited.
	Excess over Estimate.						
Do. ..	Excavation of Rushikulya canal	February 1892 ..	1	1,00,000	71	20,323	Sanction to excess still awaited.
	42. Major Works (Working Expenses)—Imperial.						
	No Estimate.						
Kistna Eastern division..	Tools required for Kistna Eastern division	December 1893 ..	1	..	..	3,729	Sanction of Government to admit the outlay is still awaited.
	Constructing iron posts for circular trap punt	March 1893	1	..	..	1,663	
	Tools required for the Kistna Eastern division	Do. (supply) ..	1	..	..	4,412	Rupees 2,530 has been sanctioned in G.O. No. 481 I., dated 1st June 1893. Sanction to the further outlay is awaited.
	Excess over Estimate.						
Gódávari Eastern ..	Diversion of Bank canal below the Maskapally lock	March 1894 (supply) ..	1	10,600	..	2,608	Sanction to the excess is still awaited.
	49. Irrigation—Imperial.						
	No Estimate.						
Kistna Eastern ..	Widening the Ellore canal	September 1893 ..	1	..	..	4,132	Sanction to estimates still awaited.
Do. Western ..	Do. tow-path from 12th to 18th on the right bank of main canal from ⅘th to 12th mile.	October 1893	1	..	..	2,134	
	Excess over Estimate.						
Periyár No. II ..	Excavation of main channel, XI reach	March 1894	1	39,512	179	14,243	Sanction of Government to excesses is awaited.
	Do. of 9th branch channel	September 1894 ..	1	56,640	1,270	10,144	
	43. Minor Works and Navigation—Provincial.						
	No Estimate.						
Cuddapah	Repairs to Dorai cheruvu	May 1893	1	..	..	2,662	Sanction to estimate still awaited.
	Excess over Estimate.						
Bellary	Improvements to Roya channel	July 1894	1	29,707	..	3,821	Sanction to excesses still awaited.
North Arcot	Widening and deepening the Cheyar main channel	Do.	1	72,400	686	4,320	
Gódávari Eastern ..	Raising the Gódávari river left embankment from Rajahmundry to Yanam.	September 1893 ..	1	45,000	..	7,006	

Simla,
13th September 1895.

(Signed) G. H. LeMAISTRE,
for Accountant-General.

Order—No. 846 I., dated 18th October 1895.

Communicated to the Superintending Engineers concerned, who will take early steps to regularize the expenditure incurred on the works detailed in the statement appended to the foregoing letter from the Government of India. It is observed that the objections to the whole of the items are outstanding for more than a year and it is high time that they were removed.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, I Circle.
„ „ „ II „
„ „ „ III „
„ „ „ IV „
„ „ „ VI „
„ Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 18th.

Recd. *Encl.*

G.O. No. 846 I., 18th Oct. 1895.

OCTOBER.

Objectionable Items

Government of India letter requesting that early steps be taken to regularize the — remaining unremedied in the accounts of the Irrigation Branch to end of April 1895, communicated to Superintending Engineers concerned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers:—

From Lieutenant-Colonel C. C. Rawson, R.E., Superintending Engineer, V Circle, to the Chief Engineer, Public Works Department, dated Tanjore, 21st June 1895, No. 233 W.

Under India Code, Volume I, chapter IX, paragraph 79, I have the honour to request that sanction may be accorded to the work "constructing an aqueduct for Darmadanapuram channel over Kondathur channel" in Máyavaram taluk, Tanjore division, as per enclosed plan and estimate, being undertaken by this department.

2. The necessity for the proposed work is explained in the report accompanying the estimate.

3. The interested kudies have already deposited Rs. 400 (the amount of estimate as submitted by the Executive Engineer) in the Máyavaram taluk treasury and the balance of the estimate will be recovered from them before the work is put in hand.

Enclosure.

Report to accompany the estimate for constructing an aqueduct for Darmadanapuram channel over Kondathur channel.

	RS.
Amount of estimate	550

A branch of Darmadanapuram channel (a minor offtake * under Vikramanar) is taken across Kondathur channel (of Iyavayanar) in a wooden trough for supplying 130 acres of Darmadanapuram lands. The irrigation with that wooden trough is very defective and the trough itself requires renewal very often, and the mirassidars concerned are frequently complaining of failure of crops. A proper aqueduct for Darmadanapuram branch over Kondathur channel is very necessary. The accompanying plans and estimate provide for constructing such an aqueduct instead of the wooden trough. The aqueduct consists of two side walls and an iron trough over them, with arrangements to remove the trough, whenever necessary, to allow the floods of Kondathur channel pass off freely.

* Receives also a lot of field drainage.

2. *Specification.*—Work will be done according to the standard specification.

(Signed) T. T. Raghavachariar,
Assistant Engineer.

23rd June 1894.

The ryots of Darmadanapuram have deposited the contribution of Rs. 400 into the Máyavaram taluk treasury on 18th January 1895.

(Signed) T. T. Raghavachariar,
Executive Engineer, Tanjore Division.

No. 185.

Note by the Chief Engineer for Irrigation.

The plan and estimate for an iron trough aqueduct submitted by the Superintending Engineer, V Circle, are not approved as the trough would be liable to be washed away during floods, and the design in other respects is considered unsuitable. An under-tunnel has therefore been substituted at an estimated cost, including Public Works charges, of Rs. 550, which sum, instead of Rs. 400, should be recovered from the interested kudies.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

14th October 1895.

ORDER—No. 847 I., dated 18th October 1895.

The execution by the Public Works Department of the work "constructing an under-tunnel for Darmadanapuram channel under Kondathur channel" in the Tanjore division, is sanctioned.

2. The term "mirassidar" is used in the report on the estimate submitted by the Superintending Engineer. Attention is called to paragraph 2 of G.O. No. 634 I., dated 4th September 1894, which prohibits the use of this term.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle,
with revised estimate and plan.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 18*th*.

Recd. *Encl.*

G.O. No. 847 I., 18th Oct. 1895.

OCTOBER.

Under-tunnel

The execution by the Public Works Department of the contribution work "constructing an — for Darmadanapuram channel under Kondathur channel" in Tanjore division, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers:—

From A. H. GARRETT, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 24th September 1895, No. 632 G.N.

I have the honour to inform you that an excess of Rs. 569 on Mahanadi * canal excavation, estimate Rs. 2,19,875, connected with the Rushikulya project, was sanctioned in G.Os., Nos. 736 I., dated 5th October 1894, and 405 I., dated 13th May 1895. The Executive Engineer has incurred a further expenditure of Rs. 172 on it in adjustment of liabilities entered in the completion report of the work in question under paragraph 167, chapter II, Vol. II. of Public Works Code. I therefore request that you will be good enough to move the Government to authorize the Examiner of Public Works Accounts to admit the further excess of Rs. 172.

* Item No. 160 in the comparative statement printed in G.O., No. 13 I. of 10th January 1894.

Office-note to the Examiner, Public Works Accounts, dated 3rd October 1895, No. 250.
„ from the „ „ „ „ 10th „ „ „ 3560 D./A.

ORDER—No. 851 I., dated 19th October 1895.

The Examiner of Public Works Accounts is authorized to pass the further outlay incurred on the work referred to, the excess of Rs. 172 being met from the balance available for unforeseen works of the Rushikulya project, which will then be reduced to Rs. 54,957.

2. This sanction is registered as No. 115 I. of 1895–96.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, I Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 19*th*.

Recd. *Encl.*

G.O. No. 851 I., 19th Oct. 1895.

OCTOBER.

Excess Outlay

The Examiner authorized to pass the further — of Rs. 172 incurred on the excavation of the Mahanadi canal, Rushikulya division.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From W. C. DEMORGAN, Esq., Executive Engineer, Rushikulya Division, to the Superintending Engineer, I Circle, dated Russellkonda, 23rd September 1895, No. 1442.

In continuation of my letter No. 1132 of 10th August 1895, I have the honour to inform you that the provision in the re-revised estimate of the project to cover the cost of the temporary establishment for the acquisition of land has been exceeded at end of August 1895 by Rs. 2,281 as particularized below :—

	RS.
Provision in the re-revised estimate * under all main heads ...	33,933
Outlay to end of August 1895	36,214
Excess over estimate ...	2,281

* *Re-revised estimate.*

	RS.
Item No. 7 ..	3,220
Do. No. 9 ..	9,680
Do. No. 10 ..	4,840
Do. No. 11 ..	5,000
Do. No. 120 ..	2,653
Do. No. 170 ..	8,540
Total ..	33,933

2. The reason of this excess is due to the continued retention of this establishment from after 31st December 1893 without sufficient provision in the estimate beyond Rs. 5,000 † (*vide* item No. 11 of the re-revised estimate). And in explanation I have the honour to say that at the same time as sanction to the extension of this establishment was each time renewed‡, application was not made for corresponding increase to the estimates under this head, because the necessity for the further retention of this establishment remained an uncertain item of calculation on each occasion, and hence it was considered best to defer applying for any addition to the estimates, pending appreciable excess actually appearing in the accounts.

† *Vide* G.O. No. 12 I., dated 10th January 1894.

Reference to sanctions.

‡ G.O. No. 12 I. of 10th January 1894—From 1st January 1894 — for 6 months.
G.O. No. 524 I. of 12th July 1894—From 1st July 1894 — for 6 months.
G.O. No. 36 I. of 16th January 1895—From 1st January 1895 — for 9 months.

3. In addition to regularizing the above excess, estimate provision has to be made and sanctioned for the further cost of this establishment where retention has been applied for up to 31st March 1896.

This further cost for eight months will amount to Rs. 3,580 as shown below:—

		RS.
* Cost for eight months at Rs. 537 per mensem	... ...	4,296
Deduct—		
One-sixth debitable to Civil Department (*vide* G.O. No. 532 I., dated 13th June 1892)	... ...	716
Net chargeable to the project	...	3,580

* G.O. No. 600 I., dated 8th July 1893.

4. Thus the total addition to be sanctioned to the estimates for cost of temporary establishment will amount to Rs. 5,861.

5. In view to this excess being met without drawing upon the reserve for works, I have the honour to submit herewith a statement proposing revision of the estimate for the several items under "2. Land" provided for in the re-revised estimate of the project, and to request that you will be good enough to have the proposed distribution sanctioned.

The revised amount in each case will cover the present excess and be sufficient to meet further debits on account.

Enclosure.

RUSHIKULYA PROJECT.

Statement showing present and proposed revision of the sanctions under "2. Land" in the re-revised estimate, Rushikulya division.

Main head.	Section.	Items.	As provided for in the re-revised estimate.		Proposed revision.		Outlay to end of August 1895.	Remarks.
			Serial number.	Amount.	Serial number.	Amount.		
				RS.		RS.	RS. A. P.	
1 Head works	Mahanadi	Temporary establishment for acquisition of land..	7	3,220	7	5,075	5,075 0 0	Completed.
		Compensation for land, houses, &c., Gullery channel and Russellkonda reservoir.	8	47,220	8	47,220	46,299 15 7	Almost completed.
	Rushikulya	Portion of cost of temporary establishment for acquisition of land.	9	9,680				
		Do. do. ..	10	4,840	9	14,000	12,767 15 7	Do.
		Do. do. ..	11	5,000				
		Surada reservoir, compensation for land, houses, &c.	12	1,16,798	12	1,12,937	1,09,016 0 10	Do.
2 Main canals and branches.	Mahanadi	Part of cost of temporary establishment for acquisition of land.	120	2,663	120	1,654	1,654 0 0	Completed.
		Compensation for land	121	17,000	121	15,000	14,837 15 3	Almost completed.
	Rushikulya	Portion of cost of temporary establishment ..	170	8,540	170	9,000	8,830 0 0	Do.
		Compensation for land	171	60,000	171	60,000	57,463 13 0	Do.
3 Distributaries	Mahanadi	Compensation	269	4,000	269	4,000	....	
	Rushikulya	Do. for land	274	60,000	274	60,000	30,183 14 7	In progress.
		Portion of cost of temporary establishment for acquisition of land.	..	..	274A	10,065	7,786 10 4	In progress.
		Total ..	..	3,38,951	..	3,38,951	2,93,915 5 2	

(Signed) W. C. DeMORGAN,
Executive Engineer.

No. 660 G.N.

Copy submitted to the Chief Engineer for Irrigation for favour of obtaining sanction of Government to the revision of the sanctions under "2. Land" in the revised estimate of the project as proposed by the Executive Engineer in the enclosed statement under the circumstances stated by him.

(Signed) A. H. GARRETT,
Suptg. Engineer, I Circle.

4th October 1895.

ORDER—No. 852 I., dated 19th October 1895.

The proposed redistribution of the sanctioned provision under "2. Land" for the Rushikulya project is sanctioned.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, I Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 19th.

Recd. *Encl.*

G.O. No. 852 I., 19th Oct. 1895.

OCTOBER.

Rushikulya Project

A certain proposed redistribution of the sanctioned provision under "2. Land" for the —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From the Collector of Kistna, dated 22nd July 1895, No. 3803.
To the Superintending Engineer, II Circle, dated 10th August 1895, No. 2490 C.

From A. S. RUSSELL, Esq., Officiating Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Madras, 7th October 1895, No. 1453 K.S.

I have the honour to forward herewith, for your approval and sanction of Government, a comparative statement, amounting to Rs. 4,200, for excavating Viravalli drain in the Kistna Eastern division.

2. The original estimate, amounting to Rs. 3,530, was sanctioned in G.O., No. 410 I., dated 14th May 1891.

3. The necessity for the excess over the original estimate has been explained in the remark column of the comparative statement. The excess can be met from the balance available for unforeseen works of the Kistna delta system.

ORDER—No. 856 I., dated 23rd October 1895.

The following revised estimate is sanctioned in supersession of the estimate of Rs. 3,530 sanctioned in G.O., No. 410 I, dated 14th May 1891, the excess of Rs. 670 being met from the balance of the amount available for unforeseen works of the Kistna delta system, which will then be reduced to Rs. 11,208 :—

Capital expenditure not charged to Revenue.
49. Irrigation.
Kistna Delta System.
Eastern Section.
I. Works.
Ellore Canal.
4. Drainage and Protective Works.
Viravalli Drain.

	RS.
2. Land ...	920
4. Earthwork ...	3,280
Total estimate ...	4,200

2. This sanction is registered as No. 116 I. of 1895-96.

3. The notification for the acquisition of the land, as amended by Government, is approved and will be published in the *Fort St. George Gazette.*

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Collector of Kistna.
" Superintending Engineer, II Circle, with one enclosure.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 23rd.

Recd. *Encl.*

G.O. No. 856 I., 23rd Oct. 1895.

OCTOBER.

Viravalli Drain

Revised estimate of Rs. 4,200 for excavating —, Kistna Eastern delta, sanctioned with remarks, and the notification for the acquisition of certain land ordered to be published in the *Fort. St George Gazette.*

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers:—

G.O. No. 1300 P.W.D., dated 24th May 1876.
" " 311 Revenue, " 11th March 1880.
" " 451 I., P.W.D., " 3rd " 1884.

From the Hon'ble Mr. E. GIBSON, Secretary to Government, Revenue Department, to the Chief Engineer for Irrigation, dated Ootacamund, 12th August 1895, No. 45.

With reference to the inquiry made in his office-note, dated 16th July, the undersigned has the honour to inform the Chief Engineer that dasabandam tanks are not Government works handed over to ryots for maintenance, but irrigation works constructed by private individuals, it being the policy of former Governments to encourage by grants of inams the construction, repair and maintenance of such works in dry districts by private agency.

Grants of Inams.—The grants are now of two descriptions—" Khanda dasabandams " where a specified field or fields are enjoyed by the dasabandamdars as inams and " Shamilat dasabandams " where they are remunerated by a fixed share of the revenue derived each year from the work. Dasabandamdars are bound to keep the tanks in a state of efficiency and to execute all ordinary repairs on pain of resumption of the inams.

2. The following extracts will explain the origin and the nature of these dasabandam tanks more fully :—

Paragraph 6 of Sir Thomas Munro's letter to the Board, dated 23rd June 1801, No. 59—

" The sum of 43,265 pagodas in column 74 is the amount of inams granted for the building of tanks, &c., of which near 30,000 pagodas belong to the three districts of Goramcondah. In other districts the inam is usually an eighth or tenth of the Sircar share of the produce ; but there it is from one-fourth to one-half. There are three different kinds of this inam—one is when it is a certain field which may be either cultivated or not according to the quantity of water in the tank ; a second is when it is a certain proportion of the produce ; and a third, and by far the most common is, when it is a fixed and invariable quantity of cultivated land. In this last way it may often greatly exceed the Sircar share, for, suppose the whole land under a tank to be 20 candies and the inams 8 candies, if only 12 or only 8 cultivated, the inamdar still takes his complete inam, and in the one case, leaves only half his own share and in the other nothing to the Sircar. These inams are said to have been first granted in Goramcondah above two centuries ago in order to encourage the construction of tanks of which that district had then very few. If this was really the case the design has met with all the success that could have been expected, for I have seen no country that is better supplied with tanks than Goramcondah now is. It is not so much the amount of those inams as the mode of fixing them that is objectionable, for could Government all secure three-fourths or even a half of the produce of tanks which should cost it nothing, it would no doubt, be a greater gainer in the end than it would be by constructing them at its own expense.

"There is great reason to suspect that many of the tank inams have been created by the karnams, that others have been augmented in value by changing the original tenure for one more favourable, and that numbers of them ought to revert to the Sircar from failure of heirs, but these points can only be ascertained after a long and tedious investigation. A great diminution of almost every description of inams will be the result, yet such is the quantity of waste that I scarcely look for an addition from them of 25,000 pagodas to revenue."

(2) Paragraph 47 of the report on the operations of the Inam Commission—

"The inams of this class usually known as "dasabandams" are confined chiefly to the Ceded District, the western proportions of Guntúr, Nellore, North Arcot and Salem. They were granted as a recompense to private individuals who constructed tanks, wells and river channels by means of which the revenue of the State was augmented. The extent and value of the inam were in proportion to the capital expended on the work and the outturn in revenue. These grants are of two descriptions—"Khanda dasabandams," or inams given in specific localities and "Shamilat dasabandams," or the allowance as inam of a certain proportion of each year's cultivation under the work in question. Inams of the latter description were not brought on the inam registers, as they had no locality. In all ordinary cases dasabandamdars are under the obligation of maintaining the works of irrigation in due repair. In some cases such a condition was either not attached to dasabandam inams or it had not been enforced for a long time. Such inams were treated and enfranchised as personal grants."

(3) Paragraph 3 of Board's Proceedings, dated 29th December 1879, No. 3404—

"The exact nature and origin of the dasabandam tenure is involved in some obscurity, but the Board do not regard Mr. Gribble's view as correct. As pointed out in Board's Proceedings, dated 9th August 1876, No. 2020, it seems clear from a letter from Sir Thomas Munro written in 1801 that the inams were originally granted to encourage the construction of tanks in a district ill-supplied with the means of irrigation, and the Government, repudiating the policy adopted in 1870, held that such works are "doubtless the recognised private and beneficial works of past generations." There may have been considerable encroachments in time past, but the titles cannot now be questioned. It is doubtless within the competence of Government to resume the inams temporarily in case of refusal to execute ordinary repairs in the same way as State grants to private charitable institutions are attached until the buildings have been put in proper repair, and this course has sometimes been resorted to, but no claim to deal with the works themselves as Government property has ever been put forward, and the inamdars are not bound to satisfy modern requirements by the construction of additional works. There is no analogy between the case of service and dasabandam inams, and even if there were, it is observed that the holders of the former were not summarily deprived of their grants, but allowed to enfranchise on favourable terms; nor does the fact that no claim has ever been put forward by dasabandamdars to the beds of the tanks support Mr. Gribble's view; a property in the waterspread was not necessarily conveyed by the permission to construct the tank."

(4) G.O. No. 311, dated 11th March 1880.

No. 178 I.

Note by the Chief Engineer for Irrigation.

During the investigation by the Tank Restoration Scheme of certain minor basins in the North Arcot and Salem districts, a large number of estimates have been received for the repair of dasabandam tanks. Instructions for the repair of these tanks were issued in G.O. No. 451 I., dated 3rd May 1884, but it is not quite clear what policy Government wishes to follow, and the instructions given are not very definite as they only lay down what the dasabandamdars are not expected to do, and do not mention the agency by which the work, which the dasabandamdars are not expected to do, is to be carried out, nor the standard of efficiency to which the works should be brought.

2. The practical question for the decision of Government appears to be whether any considerable expenditure is to be incurred (under 43. Minor Works and Navigation) on dasabandam irrigation works in the shape of special repairs and improvements, or whether the majority of these works are to remain in their present unsatisfactory condition without sluices or proper escapes. Unless Government comes forward with a contribution, the present state of affairs is likely to continue for an indefinite period.

3. From the orders above quoted it appears that dasabandamdars can only be required to maintain their tanks up to the standard which was deemed necessary at the time they were constructed and that improvements, such as adequate escapes, regarding which nothing was known at that time, should not be demanded of them when the construction involves an expenditure bearing more than a fair proportion to the revenue (G.O. No. 1300, dated 24th May 1876) but what an adequate escape or a fair proportion of the revenue is, does not appear to be laid down. Hardly any of these tanks are provided with efficient escapes and it is, in many cases, perfectly easy to evade what appears to be the duty of Government and to make them safe by forcing the dasabandamdars to raise the bund to a height to suit the existing inadequate escapes on pain of resumption of the inams, though the cheaper and more suitable method would be to provide a longer escape with a comparatively low bund. According to the existing custom it would therefore apparently be within the terms of the original agreement to force the inamdars to maintain bunds at an unnecessary height in order to save Government the cost of a contribution towards special repairs. As Government has for years been receiving a portion of the wet assessment with absolutely no expenditure in return, a contribution, when special repairs are required, seems only equitable.

4. In the accompanying draft rules it is provided that ordinary repairs should, as now, be carried out by the dasabandamdars, but that the cost of special repairs should be contributed by Government and the inamdars in proportion to the interests of each. In order not to press too hard on the dasabandamdars, it is proposed that the usual percentage charges for establishment, &c., should be waived and that the inamdars should be permitted to execute the special repairs under the supervision of the Public Works Department or Collector. If this is allowed the contribution will be practically reduced to the supply of labour and materials and no cash need be collected.

5. It is suggested that the draft rules may be referred to the Revenue Department for such modification as may be necessary and that definite answers may be given to the following:—

(*a*) When an estimate is prepared for the restoration of a dasabandam tank is it to provide for bringing the work to the standard of efficiency ordinarily considered necessary in the case of other Government Irrigation Works?

(*b*) How is the cost of restoration to be met?

Ootacamund,
21st August 1895.

(Signed) F. W. ASHPITEL,
for Chief Engineer for Irrigation.

Mis. No. 3723, Revenue.

Retransferred to the Public Works Department, with the remark that the proposed rules seem fair and suitable, and in accordance with the tenure of dasabandam inams.

2. Of the two questions asked at paragraph 5 of the note, dated 21st August 1894, the first (relating to the standard of repairs) is answered in the affirmative. The cost of the restoration referred to in the second question should be met as in paragraph 3 of proposed rules, but the inamdars should be first asked to give their consent to the execution of the necessary works. If they refuse to consent, or, having consented, subsequently fail to pay their share of the cost, the inam will be resumed.

Ootacamund,
14th September 1895.

(Signed) E. GIBSON,
Secretary to Government.

Order—No. 858 I., dated 24th October 1895.

The following rules for the repair and maintenance of dasabandam tanks are approved:—

(1) Inasmuch as dasabandam inams were originally granted to encourage the construction of irrigation works in districts ill-supplied with means of irrigation (and the amounts of the inams were presumably calculated on the assumed capital cost and annual cost of maintenance), the dasabandamdars should be required to maintain the works in a due state of repair.

2. When a dasabandam irrigation work is reported to be in a bad state of repair and the restoration involves the construction or reconstruction of sluices and surplus escapes, the Collector or, in the case of works included in the list of minor works in charge of the Public Works Department the Executive Engineer, shall cause an estimate to be prepared for the thorough repair of the work.

3. The cost of restoration of a dasabandam irrigation work, as provided in rule 2, shall be divided between Government and the dasabandam inamdars in proportion to the interest each has in the work, this interest being determined by the ratio of the value of the inams to the average annual collection of revenue during the previous five years, but the inamdars should be first asked to give their consent to the execution of the necessary works. If they refuse to consent, or, having consented, subsequently fail to pay their share of the cost, the inam will be resumed.

4. When a dasabandam irrigation work is reported to be in need of ordinary repairs, which do not involve the construction of any masonry work, the Collector shall call upon the dasabandam inamdars to execute the repairs necessary to bring the work up to the standard of efficiency ordinarily considered necessary in the case of ordinary Government irrigation works and shall fix a reasonable time within which the repairs shall be carried out, failing which the inam should be fully assessed.

5. The restoration of dasabandam irrigation works, as provided for in rule 2, shall be carried out by the Public Works Department, or by the establishment under Collectors, the actual execution of the work being entrusted to the dasabandam inamdars. If they fail to execute the work in a satisfactory manner, the inam may be fully assessed.

6. In the case of dasabandam irrigation works the usual percentage charges for establishment, tools and plant shall be waived.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, all Superintending Engineers.
,, the Examiner, Public Works Accounts.
,, the Revenue Department.
Editors' Table.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 24th.

Recd. *Encl.*

G.O. No. 858 I., 24th Oct. 1895.

OCTOBER.

Dasabandam Irrigation Works

Certain rules for the repair and maintenance of —, approved.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From J. S. WILSON, Esq., Executive Engineer, South Arcot Division, to the Superintending Engineer, V Circle, dated Cuddalore, 4th October 1895, No. 530 S.E.

In forwarding herewith a further application for modification of grants, I have the honour to state that, with regard to the surrenders on Chidambaram drainage scheme, I find it will be impossible to spend more than the amounts noted in the statement. I have before explained the difficulties with contractors on these works and now find that, owing to the rain, harvest, &c., that the grant must be reduced. The harvest lasts till well into February and I think it therefore inadvisable to count on being able to get the old Coleroon drain widening put in hand.

ENCLOSURE.

APPLICATION for modification of existing grants under irrigation for the year 1895–96, V Circle

Item No.	Division.	Works.	Amount of estimate.	Existing grant.	Modification applied for.		Modification proposed.		Revised grant.	Remarks.
					Decrease.	Increase.	Decrease.	Increase.		
		MINOR WORKS AND NAVIGATION.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	
		Works for which Capital and Revenue Accounts are kept.								
		Capital.								
		Lower Coleroon Anicut System.								
1	South Arcot.	Extending Salientope branch of Coleroon Rajah Voikal.	5,010	4,227	3,000	..	3,000	..	1,227	As funds were allotted only in August, the grant could not be fully utilized during the year.
2	Do.	Widening Khan Sahib's Canal.	9,600	7,000	2,400	..	2,400	..	4,600	Required land not yet completely handed over. Further there is water in the canal; hence the surrender.
3	Do.	Old Coleroon drain—aqueduct and bridge extension.	25,240	8,000	1,388	..	1,388	..	6,612	The irrigation season extends up to end of January next and then there will be just sufficient time to excavate foundations and laying in concrete for which Rs. 6,612 is considered sufficient.

Application for modification of existing grants under irrigation for the year 1895-96—*cont.*

Item No.	Division.	Works.	Amount of estimate.	Existing grant.	Modification applied for. Decrease.	Modification applied for. Increase.	Modification proposed. Decrease.	Modification proposed. Increase.	Revised grant.	Remarks.
			RS.	RS.	RS.	RS.	RS.	RS.	RS.	
		Agricultural Works.								
		Major Original Works.								
4	South Arcot.	Old Coleroon drain—clearing, widening and forming banks.	89,600	11,077	11,077	..	11,077	..	..	Owing to rain and irrigation season which extends up to January, work cannot be proceeded with—*vide* Executive Engineer's letter No. 530 S.E., dated 4th October 1895 (copy attached).
		Works for which Capital and Revenue Accounts are kept.								
		Revenue.								
		Extensions and Improvements.								
5	South Arcot.	Lower Coleroon anicut system.	L.S.G.	2,000	1,112	..	1,112	..	888	The amounts are surrendered for want of sufficient sanctioned estimates to work out the grants.
6	Do.	Shatiatope anicut system ..	Do.	1,963	700	..	700	..	1,263	
		Maintenance and Repairs.								
7	South Arcot.	Lower Coleroon anicut system.	Do.	16,000	4,219	..	4,219	..	11,781	
8	Do.	Shatiatope anicut system ..	Do.	12,000	5,990	..	5,990	..	6,010	
9	Do.	Vriddhachalam anicut system.	Do.	3,800	..	700	..	700	4,500	Additional grant absolutely required to carry out, to completion, works now in progress.
		Total of accounts kept ..	..	66,067	29,886	700	29,886	700	36,881	
		Works for which Capital and Revenue Accounts are not kept.								
10	South Arcot.	Minor original works ..	L.S.G.	15,000	3,560	..	3,560	..	11,440	Surrendered for want of sufficient sanctioned estimates.
		Minor Works of Revenue Department.								
		Repairs.								
11	South Arcot.	Keelathoo channel, repairing.	430	233	200	..	200	..	33	Not required. Work almost completed.
		Agricultural Works.								
12	South Arcot.	Minor original works ..	L.S.G.	400	400	..	400	..	..	Surrendered for want of sufficient sanctioned estimates.
13	Do.	Repairs	Do.	8,700	4,750	..	4,750	..	3,950	
		Total of accounts not kept ..	..	24,333	8,910	..	8,910	..	15,423	
		Grand Total ..	..	90,400	38,796	700	38,796	700	52,304	

No. 309 E.I.

Submitted to the Chief Engineer for Irrigation with request that he will be so good as to obtain the sanction of Government to the modifications herein applied for.

CHEPÂK, 12th October 1895. (Signed) C. C. RAWSON, Lieut.-Colonel, R.E., Superintending Engineer, V Circle.

No. 193 I.

Submitted to Government. The amounts not required for expenditure may be credited to the reserve.

2. The reasons assigned for the large surrender from the current year's grants are hardly satisfactory. Rupees 20,731, or more than half the amount not required has been relinquished for want of sanctioned estimates without any explanation of the circumstances which precluded their preparation. The Executive Engineer should not have applied for larger grants than he could have spent.

21st October 1895. (Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

ORDER—No. 864 I., dated 24th October 1895.

The following transfers of funds are sanctioned :—

Irrigation.

43. Minor Works and Navigation.

From

South Arcot Division.
Minor Works for which Capital and Revenue Accounts are kept.
Capital Account.
Lower Coleroon Anicut System.

	RS.	RS.
Works	6,788	
Establishment	1,561	
		8,349

Revenue Account.
Lower Coleroon Anicut system.

	RS.	RS.
Extensions and improvements.	1,112	
Maintenance and repairs ...	4,219	
	5,331	
Establishment	1,226	
		6,557

Shatiatope Anicut System.

	RS.	RS.
Extensions and improvements ...	700	
Maintenance and repairs ...	5,990	
	6,690	
Establishment	1,539	
		8,229

Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.

	RS.	RS.
Ordinary Works—		
Minor original works ...	3,560	
Establishment	819	
Tools and plant	53	
		4,432

Agricultural Works.

	RS.	RS.
Major original works	11,077	
Minor original works	400	
Repairs	4,750	
		16,227
Total ...		43,794

To

Minor Works for which Capital and Revenue Accounts are kept.
South Arcot Division.
Revenue Account.
Vriddhachalam Anicut System.

	RS.	RS.
Maintenance and repairs ...	700	
Establishment	161	
		861

Agricultural Works.

	RS.	RS.
Reserve—		
Repairs	37,677	
Establishment	4,934	
Tools and plant	322	
		42,933
Total ...		43,794

From

Minor Works, Revenue Department.
South Arcot Division.

	RS.
Repairs	200
Establishment	46
Tools and plant	3
Total ...	249

To

	RS.
Reserve—	
Original works	200
Establishment	46
Tools and plant	3
Total ..	249

2. The attention of the Superintending Engineer, V Circle, is drawn to the remarks in paragraph 2 of the foregoing endorsement of the Chief Engineer for Irrigation.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 24th.

Recd. *Encl.*

G.O. No. 864 I., 24th Oct. 1895.

OCTOBER.

Funds

A modification of existing grants for the South Arcot division, sanctioned with remark.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 19th August 1895, Mis. No. 4408.

To the Superintending Engineer, III Circle, dated 24th August 1895, No. 40 C.D.

From Lieut.-Col. D. McNEIL CAMPBELL, R.E., Superintending Engineer, III Circle, to the Chief Engineer for Irrigation, dated Bellary, 7th October 1895, No. 2147.

With reference to your memo. No. III/40 C.D., dated 24th August 1895, regarding the grant required for Venkatarayani cheruvu of Peddamallala, I have the honour to state that the whole amount of the estimate, viz., Rs. 2,650, will be spent during the current official year.

To save delay, the Executive Engineer has issued orders to start work.

No. 192 I.

Submitted to Government. The present balance of the reserve under "43. Minor works, Revenue Department," may be appropriated to the work referred to. The Superintending Engineer should apply for further funds later on in the year, if absolutely required.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

18th October 1895.

ORDER—No. 865 I., dated 24th October 1895.

The following transfers of funds are sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Minor Works, Revenue Department.

From	RS.	*To*	RS.
Reserve—		Cuddapah Division—	
Original works	1,603	Original works	1,603
Establishment	369	Establishment	369
Tools and plant	24	Tools and plant	24
Total ...	1,996	Total ...	1,996

2. The attention of the Superintending Engineer, III Circle, is drawn to the concluding portion of the foregoing endorsement of the Chief Engineer for Irrigation.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, III Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 24th.

Recd. *Encl.*

G.O. No. 865 I., 24th Oct. 1895.

OCTOBER.

Funds

A transfer of — for Minor Works, Revenue Department, Cuddapah division, sanctioned with remark.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From A. S. RUSSELL, Esq., Officiating Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Madras, 4th October 1895, No. 1402 K.S.

I have the honour to forward herewith, for your approval and sanction of Government, an estimate amounting to Rs. 540 for constructing a paddle boat for the River Conservancy sub-division in the Kistna Western division.

2. The estimate is classed under Tools and plant of 43. Minor works and Navigation, and there are no funds at present available to meet the cost.

3. I request, therefore, that you will be so good as to provide the necessary funds to cover the outlay.

ORDER—No. 866 I., dated 24th October 1895.

The following estimate is sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Agricultural Works.
Tools and Plant.
Navigation Plant.
Kistna Western Division.

	RS.
Constructing a paddle boat, estimate	540

2. This sanction is registered as No. 117 I. of 1895-96.

3. A sum of Rs. 540 required to cover the outlay on the boat is appropriated from the reserve under "43. Agricultural works" as shown below :—

	RS.
Repairs	434
Establishment	100
Tools and Plant	6
Total ...	540

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle, with estimate.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 24th.

Recd. *Encl.*

G.O. No. 866 I., 24th Oct. 1895.

OCTOBER.

Boat

Estimate of Rs. 540 for constructing a paddle — for use in Kistna Western division, sanctioned and the amount appropriated from the reserve under "43. Agricultural works."

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From the Executive Engineer, Kurnool Division, to the Superintending Engineer, III Circle, dated 27th September 1895, No. 2824.

I have the honour to inform you that in G.O. No. 1641 W., dated 5th July 1895, 30 lascars have been sanctioned for survey work on Rs. 6 per mensem under the head "Establishment."

2. As no monthly-paid men can be procured for the work, local labour is employed instead according to requirements not exceeding the amount provided in the estimate, and the charge debited to Establishment against the sanction; but the Examiner of Public Works Accounts has disallowed the debit to that head on the ground that they are not monthly-paid servants, and as such, their salaries should be debited to Works only.

3. The expenditure on account has accordingly been written back to Works and the Works outlay is now held under objection for want of estimate.

4. To remove the objection and to cover the probable expenditure that would be incurred on account, an estimate is herewith submitted for favour of early sanction, the requisite funds to meet the outlay having been applied for in the statement of re-appropriation of budget grants sent on 22nd September 1895.

Enclosure.

Draft Report to accompany the estimate.

In G.O. No. 1641 W. of 5th July 1895, provision was made for 30 lascars for survey work on Rs. 6 per mensem. As no monthly-paid men can be procured for the work, local labour employed instead according to requirements which has been found to be more economical also, and the charge debited to Establishment against the sanction; but the Examiner of Public Works Accounts has disallowed the debit to that head on the ground that they are not monthly-paid servants, and as such, their salaries should be debited to Works only.

The debit to Works on account is now held under objection for want of estimate and to remove the objection and to cover the probable cost. An estimate is now submitted for sanction, funds required for the same having been applied for separately.

Kurnool, 25th September 1895.

(Signed) A. C. PEREIRA, Executive Engineer.

No. 2124.

Submitted to the Chief Engineer for Irrigation for favour of obtaining the necessary sanction of Government to the supplemental estimate for Rs. 2,160 herewith sent under the circumstances represented by the Executive Engineer.

2. This cancels the provision of Rs. 2,160 for 30 lascars at Rs. 6 for 12 months made in G.O. No. 1641 W., dated 5th July 1895, under Temporary establishment and increases the estimate for works sanctioned in G.O. No. 596 I., dated 31st July 1895, from Rs. 11,200 to Rs. 13,360.

(Signed) D. McN. CAMPBELL, Lieut.-Col., R.E., Superintending Engineer, III Circle.

3rd October 1895.

No. 183 I.

Submitted to Government with a recommendation that the revised estimate of Rs. 13,360 be sanctioned.

2. The sanction to this estimate may expire on the 31st March 1897.

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Chief Engineer for Irrigation.

9th October 1895.

ORDER—No. 867 I., dated 24th October 1895.

The following revised estimate is approved in supersession of the estimate of Rs. 13,800 sanctioned in G.O. No. 596 I., dated 31st July 1895 :—

Irrigation.
43. Minor Works and Navigation.
Minor works for which Capital and Revenue Accounts are kept.
Kurnool-Cuddapah Canal.
Open Capital Account.
2. Main Canals and Branches.
14. Miscellaneous.
Unremunerative work.
Demarcating land under the canal.

	RS.
Works	13,360
Establishment	3,073
Tools and plant	67
Total estimate ...	16,500

2. The Examiner of Public Works Accounts will see that the outlay on the work is shown in the Administrative accounts as part of the Kurnool-Cuddapah canal.

3. The sanction accorded in G.O. No. 1611 W., dated 5th July 1895, under "Establishment, temporary" to the employment of 30 lascars is cancelled.

4. Ordered that a copy of these Proceedings be forwarded to the Government of India with a request that sanction may be accorded to the revised estimate.

[Here enter No. 868 I., dated 24th October 1895.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, III Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

ENDORSEMENT—No. 868 I., dated 24th October 1895.

Forwarded.

(By order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 24th.

Recd. *Encl.*

G.O. Nos. 867, 868 I., 24th Oct. 1895.

OCTOBER.

Kurnool-Cuddapah Canal

Forwarding Proceedings requesting sanction to a revised estimate of Rs. 16,500 for demarcating land under the —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

Telegram from the Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 19th October 1895, No. 55.

Your telegram No. 36. Can spend thirty thousand under Agricultural repairs—twenty Central, ten Eastern division.

ORDER—No. 872 I., dated 26th October 1895.

The following transfer of funds is sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Agricultural Works.

From	RS.	*To*	RS.
Reserve—		Repairs—	
Repairs	30,000	Gódávari Central division ...	20,000
		Do. Eastern do. ...	10,000
Total ...	30,000	Total ...	30,000

The following deferred telegram will be sent :—

To the Superintending Engineer, I Circle.

"Your telegram 55, 19th instant. Additional grant Rs. 30,000 sanctioned."

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 26th.

Recd. *Encl.*

G.O. No. 872 I., 26th Oct. 1895.

OCTOBER.

Funds

A transfer of — for Agricultural works in Gódávari Eastern and Central divisions, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 8th October 1895, No. 321.

Resolution—dated 8th October 1895, No. 321.

The Board resolves to forward to the Chief Engineer for Irrigation the comparative statement of irrigation and rainfall for the official year 1894–95. This statement does not include particulars of irrigation in the Trichinopoly district, as the Collector has not yet submitted his return. The delay is due to the revision of settlement in the district as already explained in paragraph 1 of Board's Proceedings, dated 16th August 1895, No. 261. A supplemental statement will be furnished on receipt of the necessary particulars from the Collector.

2. The season was generally unfavourable during the year. Excluding the two West Coast districts and the Nilgiris, where there are no irrigation works, as also the Madras district, where the lands are charged with quit-rent, the average rainfall for the rest of the Presidency was 31·91 inches against 39·74 inches in 1893–94 and 33·95 inches, the average of five years ending 1893–94. The south-west monsoon was up to the average, but it set in late in several districts. The north-east monsoon was scanty, being less than that of the previous year by 7 inches, and less than the normal by nearly 2 inches. The Gódávari began to rise in June, attaining a maximum height of 11·6 feet above the crest of the anikat on the 23rd July 1894. There was no damage to any of the works. The Kistna was in freshes in the middle of June and rose to 14·50 feet over the crest of the anikat on the 29th July 1894. The freshes of the Pennér were not so good as in the previous year. The freshes in the Cauvery were fair, but the flow of water in the river ceased earlier than usual. Statements showing the rainfall in each district during each monsoon of the year under report compared with the previous year, and the average of the five years ending 1893–94, as also the details for each month, are appended.

3. The following abstract compares the area actually irrigated from Government sources in 1894–95 and 1893–94 :—

—	Anikat and other important works—Classes I and II.		Other works—Classes III and IV.		Total.		Difference.
	1893–94.	1894–95.	1893–94.	1894–95.	1893–94.	1894–95.	
	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.	ACS.
Government land ..	2,051,799	2,060,390	* 2,490,748	2,301,876	4,542,547	4,362,266	— 180,281
Inam land	527,427	531,252	454,920	438,588	982,347	969,840	— 12,507
Zemindari land ..	255,423	265,684	27,127	17,804	282,550	283,488	+ 938
Total ..	† 2,834,649	† 2,857,326	† 2,972,795	† 2,758,268	5,807,444	5,615,594	— 191,850
Difference ..	..	+ 22,677	..	— 214,527	..	— 191,850	..

* Revised figures. † Exclusive of figures relating to the Trichinopoly district.

	Increase. ACS.	Decrease. ACS.
Rushikulya project	18,275	..
Ganjám minor rivers system	1,112	..
Gódávari anikat	30,911	..
Kistna do.	13,303	..
Pennér do.	9.5	..
Sangam do.	2,872	..
Kurnool-Cuddapah canal	..	2,111
Cumbum tank	233	..
Chembrambakam tank	..	3,442
Madras water-supply and irrigation extension project	1,698	..
Vallur anikat	545	..
Palar do.	..	8,158
Cheyáru do.	..	4,306
Poiney do.	..	768
Pelandorai do.	667	..
Lower Coleroon anikat	..	17,409
Shatiatope do.	1,297	..
Vriddachalam do.	..	384
Mehmattur do.	..	428
Tirukkóyilúr do.	..	1,026
Cauvery do.	..	5,740
Srivaikuntam do.	..	1,952
Marudur do.	..	1,295
Thadapalli channel do.	..	2,336
Arkankottai do.	..	267
Kalingarayan do.	730	..
Barur project do.	..	279
Total ..	72,578	49,901

4. As compared with the previous year, there was an increase of 22,677 acres under class I and II works resulting from a gross increase of 72,578 acres under the Rushikulya and Madras water-supply and irrigation extension projects, Ganjám minor rivers system, Cumbum tank, Kalingarayan channel and the Gódávari, Kistna, Pennér, Sangam, Vallur, Pelandorai and Shatiyatope anikats, and a gross decrease of 49,901 acres in the remaining works falling under these classes as shown on the margin. The decrease under these classes, as well as that under class III and IV works in almost all the districts is attributed to the generally unfavourable character of the season.

(True Copies and Extract.)

(Signed) P. RAJARATNA MUDALIAR,
Secretary.

(True Copy.)

(Signed) I. SARABHALINGAM NAIDU,
First Assistant.

To the Chief Engineer for Irrigation.

Copy to the Collectors of all Districts, except Madras, Nilgiris, South Canara and Malabar.

APPENDIX I.

COMPARATIVE statement of rainfall in each district.

Districts.	Average of five years ending 1893-94.		1893-94.		1894-95.	
	South-west monsoon.	North-east monsoon.	South-west monsoon.	North-east monsoon.	South-west monsoon.	North-east monsoon.
Ganjám	33·82	15·85	43·14	10·97	34·43	11·90
Vizagapatam	38·50	11·48	46·64	9·87	36·89	15·44
Gódávari	29·53	14·39	* 31·20	24·06	24·40	15·19
Kistna	23·72	11·48	23·11	13·55	18·70	12·18
Nellore	12·60	17·66	10·82	32·20	12·89	18·56
Cuddapah	16·89	10·01	16·08	16·06	19·26	8·82
Anantapur	15·81	7·81	16·31	8·43	14·40	7·43
Bellary	16·96	7·54	19·03	9·29	15·62	6·45
Kurnool	21·69	8·11	* 19·12	8·79	19·92	8·53
Chingleput	18·02	18·99	* 16·08	* 31·75	22·27	20·26
North Arcot	19·88	15·23	16·89	22·81	19·06	11·44
South Arcot	18·01	19·62	17·23	31·88	23·01	16·49
Tanjore	16·54	25·58	16·80	36·59	15·34	19·83
Trichinopoly	15·44	17·79	16·93	25·01	17·04	10·46
Madura	12·27	17·97	12·23	21·32	12·75	16·52
Tinnevelly	6·95	17·77	4·50	18·47	4·47	12·10
Coimbatore	12·91	12·86	12·21	17·53	12·35	9·23
Salem	20·21	11·29	21·37	17·05	21·36	9·43
Average ..	19·43	14·52	19·98	19·76	19·12	12·79

* Revised figures.

APPENDIX II.

COMPARATIVE statement of rainfall in each month of the year 1894–95.

Months.	Rainfall.		
	Average of five years ending 1893–94.	1893–94.	1894–95
April	1·09	1·11	1·61
May	1·52	2·11	1·50
June	3·34	3·65	1·94
July	4·12	* 5·52	3·52
August	4·53	3·31	5·93
September	4·83	* 4·28	4·62
Total of south-west monsoon ..	19·43	* 19·98	19·12
October	7·10	6·37	7·68
November	4·25	11·59	4·01
December	1·58	0·40	0·93
January	0·27	* 0·38	0·03
February	0·51	0·52	0·12
March	0·31	0·50	0·02
Total of north-east monsoon ..	14·52	* 19·76	12·79
Total for the year ..	33·95	39·74	31·91

* Revised figures.

APPENDIX III.

Comparative statement of irrigation and rainfall in the Madras Presidency for the years 1893–94 and 1894–95.

Works.	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	Area irrigated. Sown from April to November 1894, *i.e.*, 1st crop. Total acres.	In comparison with 1893–94. Increase.	In comparison with 1893–94. Decrease.	Sown from December 1894 to March 1895, *i.e.*, 2nd crop. Total acres.	In comparison with 1893–94. Increase.	In comparison with 1893–94. Decrease.	Whole year, 1894–95. Total acres.	In comparison with 1893–94. Increase.	In comparison with 1893–94. Decrease.	Percentage of increase or decrease in 1894–95.	Rainfall. Monsoon.	1893–94.	1894–95.	Percentage of increase or decrease in 1894–95.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
						ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
Ganjám. Rushikulya project.	Government land.	..	..	..	15,919	12,869	..	2	..	1	15,921	12,868	..	+ 421·49	..	..	..	..
	Inam land ..	..	..	..	4,717	1,342	..	..	..	..	4,717	1,342	..	+ 39·76	..	..	..	..
	Zemindari land ..	..	..	..	6,517	4,065	..	..	..	..	6,517	4,065	..	+ 165 78	..	..	..	..
	Total ..	..	..	..	27,153	18,276	..	2	..	1	27,155	18,275	..	+ 205·80	..	..	..	..
Ganjám minor rivers system.	Government land.	..	..	..	29,288	829	..	3,005	408	..	32,293	1,237	..	+ 3·98	..	..	..	..
	Inam land ..	..	..	..	9,875	27	..	958	..	152	10,833	..	125	— 1·14	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	39,163	856	..	3,963	256	..	43,126	1,112	..	+ 2·65	..	..	..	..
Other works.	Government land.	..	..	..	120,522	..	5,920	4,587	..	2,357	125,109	..	8,277	— 6·20	..	..	..	..
	Inam land ..	..	..	..	25,353	..	1,670	921	523	..	26,274	..	1,147	— 4·18	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	145,875	..	7,590	5,508	..	1,834	151,383	..	9,424	— 5·86	..	..	..	..
Total ..	Government land.	2,841,075	448,248	399,530	165,729	7,778	..	7,594	..	1,950	173,323	5,828	..	+ 3·48	South-west monsoon.	43·14	34·43	— 20·19
	Inam land ..	269,849	212,216	116,807	39,945	..	301	1,879	371	..	41,824	70	..	+ 0·17	North-east monsoon.	10·97	11·90	+ 8·48
	Zemindari land ..	2,245,236	..	6,517	6,517	4,065	..	..	..	..	6,517	4,065	..	+ 165·78				
	Total ..	5,356,160	660,464	522,854	212,191	11,542	..	9,473	..	1,579	221,664	9,963	..	+ 4·71	..	54·11	46·33	— 14·38
Vizagapatam.	Government land.	302,669	175,869	164,412	51,738	..	6,610	22,737	6,379	..	74,475	..	231	— 0·31	South-west monsoon.	46·64	36·89	— 20·90
	Inam land ..	160,509	53,941	53,941	24,109	..	4,139	9,115	2,104	..	33,224	..	2,035	— 5·77	North-east monsoon.	9·87	15·44	+ 56·43
	Zemindari land ..	316,778	..	..	..	..	..	..	..	..	..	..	..	..				
	Total ..	779,956	229,810	218,353	75,847	..	10,749	31,852	8,483	..	107,699	..	2,266	— 2·06	..	56·51	52·33	— 7·40

Gódávari.																		
Gódávari anikat.	Government land.	..	..	..	331,788	9,544	..	41,682	8,751	..	373,470	18,295	..	+ 5·15	..	..	..	..
	Inam land ..	..	..	..	186,965	4,330	..	29,915	4,834	..	216,880	9,164	..	+ 4·41	..	..	..	..
	Zemindari land ..	..	..	..	139,752	..	1,468	21,433	4,920	..	161,185	3,452	..	+ 2·19	..	..	..	..
	Total ..	..	..	..	658,505	12,406	..	93,030	18,505	..	751,535	30,911	..	+ 4·29	..	..	..	..
Other works.	Government land.	..	..	..	46,253	..	4,244	2,557	..	398	48,810	..	4,642	— 8·68	..	..	..	..
	Inam land ..	..	..	..	19,760	..	2,093	1,333	..	260	21,093	..	2,353	—10·04	..	..	..	..
	Zemindari land ..	..	..	..	863	..	3,004	..	..	..	863	..	3,004	—77·68	..	..	..	..
	Total ..	..	..	..	66,876	..	9,341	3,890	..	658	70,766	..	9,999	—12·38	..	..	..	..
Total ..	Government land.	2,458,989	1,144,306	756,961	378,041	5,300	..	44,239	8,353	..	422,280	13,653	..	+ 3·34	South-west monsoon.	31·20	24·40	— 21·79
	Inam land ..	628,539	578,534	444,380	206,725	2,237	..	31,248	4,574	..	237,973	6,811	..	+ 2·95	North-east monsoon.	24·06	15·19	— 36·87
	Zemindari land ..	1,940,952	824,152	403,974	140,615	..	4,472	21,433	4,920	..	162,048	448	..	+ 0·27				
	Total ..	5,028,480	2,546,992	1,605,315	725,381	3,065	..	96,920	17,847	..	822,301	20,912	..	+ 2·61	..	55·26	39·59	— 28·36
Kistna.																		
Kistna anikat.	Government land.	..	..	..	293,587	4,636	..	1,743	410	..	295,330	5,046	..	+ 1·74	..	..	..	..
	Inam land ..	..	..	..	102,950	5,125	..	727	355	..	103,677	5,480	..	+ 5·58	..	..	..	..
	Zemindari land ..	..	..	..	96,939	2,813	..	..	..	36	96,939	2,777	..	+ 2·95	..	..	..	..
	Total ..	..	..	..	493,476	12,574	..	2,470	729	..	495,946	13,303	..	+ 2·76	..	..	..	..
Other works.	Government land.	..	..	..	31,817	6,266	..	3,413	276	..	35,230	6,542	..	+22·80	..	..	..	..
	Inam land ..	..	..	..	3,109	..	2,385	347	94	..	3,456	..	2,291	—39·86	..	..	..	..
	Zemindari land ..	..	..	..	4,415	..	6,618	3,608	1,360	..	8,023	..	5,258	—39·59	..	..	..	..
	Total ..	..	..	..	39,341	..	2,737	7,368	1,730	..	46,709	..	1,007	— 2·11	..	..	..	..
Total ..	Government land.	3,520,391	2,375,065	1,652,181	325,404	10,902	..	5,156	686	..	330,560	11,588	..	+ 3·63	South-west monsoon.	23·11	18·70	— 19·08
	Inam land ..	826,368	659,035	502,259	106,059	2,740	..	1,074	449	..	107,133	3,189	..	+ 3·07	North-east monsoon.	13·55	12·18	— 10·11
	Zemindari land ..	839,957	270,747	234,370	101,354	..	3,805	3,608	1,324	..	104,962	..	2,481	— 2·31				
	Total ..	5,186,716	3,304,847	2,388,810	532,817	9,837	..	9,838	2,459	..	542,655	12,296	..	+ 2·32	..	36·66	30·88	— 15·77
Nellore.																		
Pennér anikat.	Government land.	..	..	..	40,981	7,480	..	10,310	..	6,362	51,291	1,118	..	+ 2·23	..	..	..	..
	Inam land ..	..	..	..	13,435	2,072	..	3,246	..	2,255	16,681	..	183	— 1·09	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	54,416	9,552	..	13,556	..	8,617	67,972	935	..	+ 1·39	..	..	..	..
Sangam anikat.	Government land.	..	..	..	55,080	7,019	..	6,592	..	4,658	61,672	2,361	..	+ 3·98	..	..	..	..
	Inam land ..	..	..	..	10,188	947	..	938	..	436	11,126	511	..	+ 4·81	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	65,268	7,966	..	7,530	..	5,094	72,798	2,872	..	+ 4·11	..	..	..	..

Comparative statement of irrigation and rainfall in the Madras Presidency for the years 1893–94 and 1894–95—*cont.*

Works.	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	Area irrigated. Sown from April to November 1894, *i.e.*, 1st crop. Total acres.	In comparison with 1893–94. Increase.	In comparison with 1893–94. Decrease.	Sown from December 1894 to March 1895, *i.e.*, 2nd crop. Total acres.	In comparison with 1893–94. Increase.	In comparison with 1893–94. Decrease.	Whole year, 1894–95. Total acres.	In comparison with 1893–94. Increase.	In comparison with 1893–94. Decrease.	Percentage of increase or decrease in 1894–95.	Rainfall. Monsoon.	1893–94.	1894–95.	Percentage of increase or decrease in 1894–95.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Nellore—cont.						ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
Other works.	Government land.	..	..	..	88,416	4,461	..	29,282	..	9,442	117,698	..	4,981	— 4·06	..	..	..	..
	Inam land ..	..	..	..	25,294	951	..	9,042	..	1,289	34,336	..	338	— 0·97	..	..	..	..
	Zemindari land ..	..	..	..	753	..	217	7	7	..	760	..	210	— 21·65	..	..	..	..
	Total ..	..	..	..	114,463	5,195	..	38,331	..	10,724	152,794	..	5,529	— 3·49	..	..	..	..
Total ..	Government land.	2,599,057	1,505,015	919,366	184,477	18,960	..	46,184	..	20,462	230,661	..	1,502	— 0·65	South-west monsoon.	10·82	12·89	+ 19·13
	Inam land ..	635,503	507,592	324,717	48,917	3,970	..	13,226	..	3,980	62,143	..	10	— 0·02	North-east monsoon.	32·20	18·56	— 42·36
	Zemindari land ..	2,375,040	..	760	753	..	217	7	7	..	760	..	210	— 21·65				
	Total ..	5,609,600	2,012,607	1,244,843	234,147	22,713	..	59,417	..	24,435	293,564	..	1,722	— 0·58	..	43·02	31·45	— 26·89
Cuddapah ..	Government land.	4,842,279	1,778,155	1,189,965	68,654	..	7,396	34,327	..	12,513	102,981	..	19,909	— 16·20	South-west monsoon.	16·08	19·26	+ 19·78
	Inam land ..	726,022	654,808	467,976	39,894	..	8,107	19,946	..	5,506	59,840	..	13,613	— 18·53	North-east monsoon.	16·06	8·82	— 45·08
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..				
	Total ..	5,568,301	2,432,963	1,657,941	108,548	..	15,503	54,273	..	18,019	162,821	..	33,522	— 17·07	..	32·14	28·08	— 12·63
Anantapur ..	Government land.	2,791,619	2,006,948	1,124,585	64,679	..	8,760	38,427	..	1,303	103,106	..	10,063	— 8·89	South-west monsoon.	16·31	14·40	— 11·71
	Inam land ..	547,546	537,012	346,399	16,043	..	3,454	11,583	..	1,441	27,626	..	4,895	— 15·05	North-east monsoon.	8·43	7·43	— 11·86
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..				
	Total ..	3,339,165	2,543,960	1,470,984	80,722	..	12,214	50,010	..	2,744	130,732	..	14,958	— 10·27	..	24·74	21·83	— 11·76

Bellary ..	Government land.	2,948,327	2,512,310	1,549,481	32,206	..	2,816	3,859	..	1,091	36,065	..	3,907	— 9·77	South-west monsoon.	19·03	15·62	— 17·92
	Inam land ..	687,166	746,407	553,198	9,548	..	1,228	1,126	..	16	10,674	..	1,244	— 10·44	North-east monsoon.	9·29	6·45	— 30·57
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..				
	Total ..	3,635,493	3,258,717	2,102,679	41,754	..	4,044	4,985	..	1,107	46,739	..	5,151	— 9·93	..	28·32	22·07	— 22·07
Kurnool.																		
Kurnool-Cuddapah canal.	Government land	..	..	..	15,195	..	1,543	4,664	1,388	..	19,859	..	155	— 0·77	..	..	..	..
	Inam land ..	..	..	..	6,900	..	1,544	2,299	..	412	9,199	..	1,956	— 17·53	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	22,095	..	3,087	6,963	976	..	29,058	..	2,111	— 6·77	..	..	..	..
Cumbum tank.	Government land.	..	..	..	3,771	61	..	3,042	..	98	6,813	..	37	— 0·54	..	..	..	..
	Inam land ..	..	..	..	2,087	324	..	1,384	..	54	3,471	270	..	+ 8·43	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	5,858	385	..	4,426	..	152	10,284	233	..	+ 2·32	..	..	..	..
Other works.	Government land.	..	..	..	30,475	844	..	11,704	..	1,269	42,179	..	425	— 1·0	..	..	..	..
	Inam land ..	..	..	..	19,919	1,352	..	6,195	..	334	26,114	1,018	..	+ 4·06	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	50,394	2,196	..	17,899	..	1,603	68,293	593	..	+ 0·88	..	..	..	..
Total ..	Government land.	3,967,703	1,866,757	1,228,841	49,441	..	638	19,410	21	..	68,851	..	617	— 0·89	South-west monsoon.	19·12	19·92	+ 4·18
	Inam land ..	841,257	812,968	648,168	28,906	132	..	9,878	..	800	38,784	..	668	— 1·69	North-east monsoon.	8·79	8·53	— 2·96
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..				
	Total ..	4,808,960	2,679,725	1,877,009	78,347	..	506	29,288	..	779	107,635	..	1,285	— 1·18	..	27·91	28·45	+ 1·93
Chingleput.																		
Chembrambakkam tank.	Government land.	..	..	..	9,752	158	..	2,592	..	3,068	12,344	..	2,910	— 19·08	..	..	..	..
	Inam land ..	..	..	..	1,943	159	..	524	..	691	2,467	..	532	— 17·74	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	11,695	317	..	3,116	..	3,759	14,811	..	3,442	— 18·86	..	..	..	..
Madras water-supply and irrigation extension project.	Government land.	..	..	..	5,308	226	..	2,190	1,188	..	7,498	1,414	..	+ 23·24	..	..	..	..
	Inam land ..	..	..	..	1,173	126	..	365	127	..	1,538	253	..	+ 19·69	..	..	..	..
	Zemindari land ..	..	..	..	141	31	..	10	..	..	151	31	..	+ 25·83	..	..	..	..
	Total ..	..	..	..	6,622	383	..	2,565	1,315	..	9,187	1,698	..	+ 22·67	..	..	..	..

Comparative statement of irrigation and rainfall in the Madras Presidency for the years 1893–94 and 1894–95—*cont.*

Works.	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	Area irrigated. Sown from April to November 1894, *i.e.*, 1st crop. Total acres.	Sown from April to November 1894, in comparison with 1893–94. Increase.	Sown from April to November 1894, in comparison with 1893–94. Decrease.	Sown from December 1894 to March 1895, *i.e.*, 2nd crop. Total acres.	Sown from December 1894 to March 1895, in comparison with 1893–94. Increase.	Sown from December 1894 to March 1895, in comparison with 1893–94. Decrease.	Whole year, 1894–95. Total acres.	Whole year, in comparison with 1893–94. Increase.	Whole year, in comparison with 1893–94. Decrease.	Percentage of increase or decrease in 1894–95.	Rainfall. Monsoon.	1893–94.	1894–95.	Percentage of increase or decrease in 1894–95.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Chingleput—cont.						ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
Vallur anikat.	Government land.	..	..	..	1,996	217	..	103	10	..	2,099	227	..	+ 12·13	..	..	..	..
	Inam land ..	..	..	..	2,788	314	..	95	4	..	2,883	318	..	+ 12·40	..	..	..	..
	Zemindari land..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	4,784	531	..	198	14	..	4,982	545	..	+ 12·28	..	..	..	..
Other works.	Government land.	..	..	..	278,413	37,910	..	64,858	..	27,776	343,271	10,134	..	+ 3·04	..	..	..	..
	Inam land ..	..	..	..	45,622	8,002	..	10,608	..	3,583	56,230	4,419	..	+ 8·53	..	..	..	..
	Zemindari land .	..	..	..	1,787	..	111	312	..	243	2,099	..	354	— 14·43	..	..	..	..
	Total ..	..	..	..	325,822	45,801		75,778	..	31,602	401,600	14,199	..	+ 3·67	..	..	..	..
Total ..	Government land.	1,312,590	739,901	600,187	295,469	38,511	..	69,743	..	29,646	365,212	8,865	..	+ 2·49	South-west monsoon.	16·08	22·27	+ 38·50
	Inam land ..	265,243	220,355	122,927	51,526	8,601	..	11,592	..	4,143	63,118	4,458	..	+ 7·60	North-east monsoon.	31·75	20·26	— 36·19
	Zemindari land .	239,876	155,136	5,332	1,928	..	80	322	..	243	2,250	..	323	— 12·55				
	Total ..	1,817,709	1,115,392	781,446	348,923	47,032	..	81,657	..	34,032	430,580	13,000	..	+ 3·11	..	47·83	42·53	— 11·08
North Arcot.																		
Pálár anikat.	Government land.	..	..	..	52,743	2,383	..	21,126	..	10,191	73,869	..	7,808	— 9·56	..	..	..	..
	Inam land ..	..	..	..	7,452	1,800	..	3,566	..	2,150	11,018	..	350	— 3·08	..	..	..	..
	Zemindari land .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	60,195	4,183	..	24,692	..	12,341	84,887	..	8,158	— 8·77	..	..	..	
Cheyáru anikat.	Government land.	..	..	..	16,123	..	354	4,609	..	3,292	20,732	..	3,646	— 14·96	..	..	..	..
	Inam land ..	..	..	..	1,645	..	66	336	..	594	1,981	..	660	— 24·99	..	..	..	..
	Zemindari land .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	17,768	..	420	4,945	..	3,886	22,713	..	4,306	— 15·94	..	..	..	..

Poiney anikat.	Government land.	..	..	..	16,610	1,036	..	6,798	..	1,786	23,408	..	750	— 3·10	..	..	..	..
	Inam land ..	..	..	..	804	406	..	562	..	424	1,366	..	18	— 1·30	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	17,414	1,442	..	7,360	..	2,210	24,774	..	768	— 3·01	..	..	..	..
Other works.	Government land.	..	..	..	207,144	487	..	91,037	..	27,390	298,181	..	26,903	— 8·28	..	..	..	..
	Inam land ..	..	..	..	26,987	..	576	12,205	..	3,326	39,192	..	3,902	— 9·05	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	234,131	..	89	103,242	..	30,716	337,373	..	30,805	— 8·37	..	..	..	..
Total ..	Government land.	2,498,150	1,203,845	998,832	292,620	3,552	..	123,570	..	42,659	416,190	..	39,107	— 8·59	South-west monsoon.	16·89	19·06	+12·85
	Inam land ..	195,880	118,315	96,508	36,888	1,564	..	16,669	..	6,494	53,557	..	4,930	— 8·43	North east monsoon.	22·81	11·44	—49·85
	Zemindari land ..	2,019,840	..	..	..	..	..	..	..	..	..	..	..	..				
	Total ..	4,713,870	1,322,160	1,095,340	329,508	5,116	..	140,239	..	49,153	469,747	..	44,037	— 8·57	..	39·70	30·50	—23·17
South Arcot.																		
Pelandorai anikat.	Government land.	..	..	..	5,827	619	..	2,339	..	44	8,166	575	..	+ 7·57	..	..	..	..
	Inam land ..	..	..	..	604	73	..	255	19	..	859	92	..	+11·99	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	6,431	692	..	2,594	..	25	9,025	667	..	+ 7·98	..	..	..	..
Lower Coleroon anikat	Government land.	..	..	..	96,911	..	13,634	9,770	..	4,007	106,681	..	17,641	—14·19	..	..	..	..
	Inam land ..	..	..	..	8,124	..	273	1,745	505	..	9,869	232	..	+ 2·41	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	105,035	..	13,907	11,515	..	3,502	116,550	..	17,409	—13·00	..	..	..	..
Shatiatope anikat.	Government land.	..	..	..	26,493	931	..	2,942	192	..	29,435	1,123	..	+ 3·97	..	..	..	..
	Inam land ..	..	..	..	2,031	162	..	236	12	..	2,267	174	..	+ 8·31	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	28,524	1,093	..	3,178	204	..	31,702	1,297	..	+ 4·27	..	..	..	..
Vriddhachalam anikat.	Government land.	..	..	..	4,529	..	223	1,891	20	..	6,420	..	203	— 3·07	..	..	..	..
	Inam land ..	..	..	..	170	..	82	64	..	99	234	..	181	—43·61	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	4,699	..	305	1,955	..	79	6,654	..	384	— 5·46	..	..	..	..
Mehmattur anikat.	Government land.	..	..	..	2,374	..	601	604	114	..	2,978	..	487	—14·05	..	..	..	..
	Inam land ..	..	..	..	237	91	..	44	..	32	281	59	..	+26·58	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	2,611	..	510	648	82	..	3,259	..	428	—11·61	..	..	..	..

Comparative statement of irrigation and rainfall in the Madras Presidency for the years 1893–94 and 1894–95—*cont.*

Works.	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	Area irrigated. Sown from April to November 1894, *i.e.*, 1st crop. Total acres.	In comparison with 1893–94. Increase.	De-crease.	Sown from December 1894 to March 1895, *i.e.*, 2nd crop. Total acres.	In comparison with 1893–94. Increase.	De-crease.	Whole year, 1894–95. Total acres.	In comparison with 1893–94. Increase.	De-crease.	Percentage of increase or decrease in 1894–95.	Rainfall. Monsoon.	1893–94.	1894–95.	Percentage of increase or decrease in 1894–95.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
South Arcot—cont.						ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
Tirukkôyilûr anikat.	Government land.	..	..	..	25,586	2,503	..	8,421	..	3,373	34,007	..	870	— 2·49	..	..	..	..
	Inam land ..	..	..	..	1,595	..	101	492	..	55	2,087	..	156	— 6·95	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	27,181	2,402	..	8,913	..	3,428	36,094	..	1,026	— 2·76	..	..	..	..
Other works.	Government land.	..	..	..	224,894	11,065	..	81,495	..	32,780	306,389	..	21,715	— 6·62	..	..	..	..
	Inam land ..	..	..	..	15,043	1,394	..	4,107	..	2,214	19,150	..	820	— 4·11	..	..	..	..
	Zemindari land ..	..	..	..	19	..	26	..	..	..	19	..	26	— 57·78	..	..	..	..
	Total ..	..	..	..	239,956	12,433	..	85,602	..	34,994	325,558	..	22,561	— 6·48	..	..	..	..
Total ..	Government land.	3,158,997	1,846,994	1,400,222	386,614	660	..	107,462	..	39,878	494,076	..	39,218	— 7·35	South-west monsoon.	17·23	23·01	+ 33·55
	Inam land ..	156,843	142,293	79,180	27,804	1,264	..	6,943	..	1,864	34,747	..	600	— 1·70	North-east monsoon.	31·88	16·49	— 48·27
	Zemindari land ..	22,400	13,979	6,363	19	..	26	..	..	..	19	..	26	— 57·78				
	Total ..	3,338,240	2,003,266	1,485,765	414,437	1,898	..	114,405	..	41,742	528,842	..	39,844	— 7·01	..	49·11	39·50	— 19·57
Tanjore.																		
Upper anikat.	Government land.	..	..	..	697,719	..	7,856	79,870	11,450	..	777,589	3,594	..	+ 0·46	..	..	..	..
	Inam land ..	..	..	..	96,291	..	7,497	14,628	..	1,837	110,919	..	9,334	— 7·76	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	794,010	..	15,353	94,498	9,613	..	888,508	..	5,740	— 0·64	..	..	..	..
Other works.	Government land.	..	..	..	40,511	..	1,344	6,909	1,450	..	47,420	106	..	+ 0·22	..	..	..	..
	Inam land ..	..	..	..	3,009	233	..	636	189	..	3,645	422	..	+ 13·09	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	43,520	..	1,111	7,545	1,639	..	51,065	528	..	+ 1·04	..	..	..	..

Total ..	Government land.	1,581,233	1,202,472	1,014,565	738,230	..	9,200	86,779	12,900	..	825,009	3,700	..	+ 0·45	South-west monsoon.	16·80	15·34	— 8·69
	Inam land ..	617,017	465,089	262,182	99,300	..	7,264	15,264	..	1,648	114,564	..	8,912	— 7·22	North-east monsoon.	36·59	19·83	— 45·80
	Zemindari land ..	177,432	..	..	..	..	..	..	..	..	..	..	..	..				
	Total ..	2,375,682	1,667,561	1,276,747	837,530	..	16,464	102,043	11,252	..	939,573	..	5,212	— 0·55	..	53·39	35·17	— 34·13
Madura ..	Government land.	2,043,222	1,257,819	935,550	150,010	..	27,818	59,325	..	12,083	209,335	..	39,901	— 16·01	South-west monsoon.	12·23	12·75	+ 4·25
	Inam land ..	217,898	203,280	134,733	32,942	16,975	..	6,652	12	..	39,594	16,987	..	+ 75·14	North-east monsoon.	21·32	16·52	— 22·51
	Zemindari land ..	3,370,240	1,342,720	..	..	..	17	..	..	..	..	..	17	..				
	Total ..	5,631,360	2,803,819	1,070,283	182,952	..	10,860	65,977	..	12,071	248,929	..	22,931	— 8·43	..	33·55	29·27	— 12·76
Tinnevelly.																		
Srivaikuntam anikat.	Government land.	..	..	..	17,759	..	300	11,753	..	1,185	29,512	..	1,485	— 4·79	..	..	..	..
	Inam land ..	..	..	..	866	..	390	914	..	13	1,780	..	403	— 18·46	..	..	..	..
	Zemindari land ..	..	..	..	13	..	86	879	22	..	892	..	64	— 6·69	..	..	..	..
	Total ..	..	..	..	18,638	..	776	13,546	..	1,176	32,184	..	1,952	— 5·72	..	..	..	..
Marudur anikat.	Government land.	..	..	..	16,316	..	240	13,720	..	956	30,036	..	1,196	— 3·83	..	..	..	..
	Inam land ..	..	..	..	676	8	..	441	..	107	1,117	..	99	— 8·14	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Tatal ..	..	..	..	16,992	..	232	14,161	..	1,063	31,153	..	1,2[illegible]5	— 3·99	..	..	..	..
Other works.	Government land.	..	..	..	72,420	..	19,420	146,698	..	12,750	219,118	..	32,170	— 12·80	..	..	..	..
	Inam land ..	..	..	..	6,518	..	4,068	14,120	1,[illegible]43	..	20,638	..	3,025	— 12·78	..	..	..	..
	Zemindari land ..	..	..	..	1,689	..	1,760	4,094	1,362	..	5,783	..	398	— 6·44	..	..	..	..
	Total ..	..	..	..	80,627	..	25,248	164,912	..	10,345	245,539	..	35,593	— 12·66	..	..	..	..
Total ..	Government land.	1,898,660	1,526,900	1,136,670	106,495	..	19,960	172,171	..	14,891	278,666	..	34,851	— 11·12	South west monsoon.	4·50	4·47	— 0·67
	Inam land ..	269,759	259,282	142,164	8,060	..	4,450	15,475	923	..	23,535	..	3,527	— 13·08	North-east monsoon.	18·47	12·10	— 34·49
	Zemindari land ..	928,950	668,696	151,984	1,702	..	1,846	4,973	1,384	..	6,675	..	462	— 6·47				
	Total ..	3,097,369	2,454,878	1,430,718	116,257	..	26,256	192,619	..	12,584	308,876	..	38,840	— 11·17	..	22·97	16·57	— 27·86
Coimbatore.																		
Tadapalli channel.	Government land.	..	..	..	12,811	..	2,447	440	124	..	13,251	..	2,323	— 14·92	..	..	..	..
	Inam land ..	..	..	..	658	..	36	23	23	..	681	..	13	— 1·87	..	..	..	..
	Zemindari land ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	13,469	..	2,483	463	147	..	13,932	..	2,336	— 14·36	..	..	..	..

Comparative statement of irrigation and rainfall in the Madras Presidency for the years 1893–94 and 1894–95—*cont.*

Works.	Items.	Area of the district in acres.	Cultivable area in acres.	Cultivated area in acres.	Area irrigated. Sown from April to November 1894, *i.e.*, 1st crop. Total acres.	1st crop. In comparison with 1893–94. Increase.	1st crop. In comparison with 1893–94. Decrease.	Sown from December 1894 to March 1895, *i.e.*, 2nd crop. Total acres.	2nd crop. In comparison with 1893–94. Increase.	2nd crop. In comparison with 1893–94. Decrease.	Whole year, 1894–95. Total acres.	Whole year. In comparison with 1893–94. Increase.	Whole year. In comparison with 1893–94. Decrease.	Percentage of increase or decrease in 1894–95.	Rainfall. Monsoon.	1893–94.	1894–95.	Percentage of increase or decrease in 1894–95.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Coimbatore—cont.						ACS.	ACS.		ACS.	ACS.		ACS.	ACS.					
Arkankottai channel.	Government land.	..	..	..	3,757	..	157	147	..	19	3,904	..	176	— 4·31	..	..	..	..
	Inam land ..	..	..	..	153	..	23	10	..	68	168	..	91	— 35·14	..	..	..	..
	Zemindari land..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	3,915	..	180	157	..	87	4,072	..	267	— 6·15	..	..	..	..
Kalingarayan anikat.	Government land.	..	..	..	9,688	..	35	8,922	725	..	18,620	690	..	+ 3·85	..	..	..	..
	Inam land ..	..	..	..	1,539	..	16	1,325	56	..	2,864	40	..	+ 1·42	..	..	..	..
	Zemindari land..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	11,227	..	51	10,257	781	..	21,484	730	..	+ 3·52	..	..	..	..
Other works.	Government land.	..	..	..	58,897	..	2,164	15,886	..	6,506	74,783	..	8,670	— 10·39	..	..	..	..
	Inam land ..	..	..	..	6,109	..	340	1,774	..	1,143	7,883	..	1,483	— 15·83	..	..	..	..
	Zemindari land..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	65,006	..	2,504	17,660	..	7,649	82,666	..	10,153	— 10·94	..	..	..	..
Total ..	Government land.	4,590,950	2,728,856	2,245,230	85,153	..	4,803	25,405	..	5,676	110,558	..	10,479	— 8·66				
	Inam land ..	332,590	318,156	271,777	8,464	..	415	3,132	..	1,132	11,596	..	1,547	— 11·77	South-west monsoon.	12·21	12·35	+ 1·15
	Zemindari land..	106,880	86,983	..	..	..	..	..	..	..	..	..	..	..	North-east monsoon.	17·53	9·23	— 47·35
	Total ..	5,030,420	3,133,995	2,517,007	93,617	..	5,218	28,537	..	6,808	122,154	..	12,026	— 8·96	..	29·74	21·58	— 27·44
Salem.																		
Barur project.	Government land.	..	..	..	2,163	26	..	1,029	..	296	3,192	..	270	— 7·80	..	..	..	..
	Inam land ..	..	..	..	197	7	..	92	..	16	289	..	9	— 3·02	..	..	..	..
	Zemindari land..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	2,360	33	..	1,121	..	312	3,481	..	279	— 7·42	..	..	..	..

Other works.	Government land.	..	..	..	96,216	..	16,134	21,510	..	7,726	117,726	..	23,860	— 16·85	..	..	..	..
	Inam land ..	..	..	..	7,678	..	888	1,941	..	1,144	9,619	..	2,032	— 17·44	..	..	..	..
	Zemindari land ..	..	..	..	238	..	36	19	..	20	257	..	56	— 17·89	..	..	..	..
	Total ..	..	..	..	104,132	..	17,058	23,470	..	8,890	127,602	..	25,948	— 16·90	..	..	..	..
Total ..	Government land.	3,448,298	1,686,475	1,402,325	98,379	..	16,108	22,539	..	8,022	120,918	..	24,130	— 16·64	South-west monsoon.	21·37	21·36	— 0·05
	Inam land ..	338,081	155,570	56,160	7,875	..	881	2,033	..	1,160	9,908	..	2,041	— 17·08	North-east monsoon.	17·05	9·43	— 44·69
	Zemindari land ..	1,032,000	..	257	238	..	36	19	..	20	257	..	56	— 17·89				
	Total ..	4,818,379	1,842,045	1,458,742	106,492	..	17,025	24,591	..	9,202	131,083	..	26,227	— 16·67	..	38·42	30·79	— 19·86
Total, anikat.	Government land.	..	..	..	1,810,074	23,147	..	250,316	..	14,556	2,060,390	8,591	..	+ 0·42	..	..	..	..
	Inam land ..	..	..	..	466,068	7,285	..	65,184	..	3,460	531,252	3,825	..	+ 0·73	..	..	..	..
	Zemindari land ..	..	..	..	243,362	5,355	..	22,322	4,906	..	265,684	10,261	..	+ 4·02	..	..	..	..
	Total ..	..	..	..	2,519,504	35,787	..	337,822	..	13,110	2,857,326	22,677	..	+ 0·80	..	..	..	..
All other works.	Government land.	..	..	..	1,663,265	..	41,593	638,611	..	147,279	2,301,876	..	188,872	— 7·58	..	..	..	..
	Inam land ..	..	..	..	326,937	..	41	111,651	..	16,291	438,588	..	16,332	— 3·59	..	..	..	..
	Zemindari land ..	..	..	..	9,764	..	11,789	8,040	2,466	..	17,804	..	9,323	— 34·37	..	..	..	..
	Total ..	..	..	..	1,999,966	..	53,423	758,302	..	161,104	2,758,268	..	214,527	— 7·22	..	..	..	..
Grand Total.	Government land.	46,804,209	26,005,935	18,718,803	3,473,339	..	18,446	888,927	..	161,835	4,362,266	..	180,281	— 3·97	South-west monsoon.	19·98	19·12	— 4·30
	Inam land ..	7,716,070	6,644,853	4,623,476	793,005	7,244	..	176,835	..	19,751	969,840	..	12,507	— 1·27	North-east monsoon.	19·76	12·79	— 35·27
	Zemindari land ..	15,615,581	3,362,413	862,557	253,126	..	6,434	30,362	7,372	..	283,488	938	..	+ 0·33				
	Total ..	70,135,860	36,013,201	24,204,836	4,519,470	..	17,636	1,096,124	..	174,214	5,615,594	..	191,850	— 3·30	..	39·74	31·91	— 19·70

No. 189 I.

Submitted to Government.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

19th September 1895.

ORDER—No. 873 I., dated 28th October 1895.

The statement of irrigation and rainfall for 1894-95, received from the Board of Revenue, will be forwarded to the Government of India.

[Here enter No. 874 I., dated 28th October 1895.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineers.
,, the Revenue Department.

ENDORSEMENT—No. 874 I., dated 28th October 1895.

Forwarded.

(By order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras

PUBLIC WORKS.

Dated October, 28th.

Recd. *Encl.*

G.O. Nos. 873, 874 I., 28th Oct. 1895.

OCTOBER.

Statement of Irrigation and Rainfall

Forwarding Proceedings embodying the — for 1894-95 received from the Board of Revenue.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

No. 138 I.

Notes of Inspection by the Chief Engineer for Irrigation.

Gódávari Delta, July 1895.

During the late tour of the undersigned made in the Gódávari district, his attention was more especially directed to the several sets of the river in the Eastern and Central deltas, with a view of devising means of dealing with them more energetically than appears to have been done for more than a decade of years past. The policy of holding on to river margins by means, chiefly, of a number of stone groynes constructed at somewhat short intervals was one that, prior to the period 1874—76 during which the undersigned served in the Eastern delta of the Gódávari district, was generally if not entirely followed ; and from the results which were obtained thereby, the necessity for continuing this policy was then sufficiently well recognized and acted upon. During the last ten years, however, this policy was reversed, and orders were apparently issued that no groynes in the future were to be constructed, and that all the protective work necessary should take the form of sloping down scarped face of the river margin, and protect it either by durbah roller revetment or stone pitching as it was considered that groynes were a source of danger to the margin and, instead of preventing, accelerated erosion in the bays between contiguous groynes. How this conclusion was arrived at is not apparent, nor are the causes which led to it ascertainable. It most probably resulted from the neglect, during a few years previously, to maintain the existing groynes annually by the petty repairs that may have been found necessary. Be it as it may, the outcome of this change of policy has been disastrous in the extreme. Hundreds of feet in width, and of acres in extent, of most valuable lunka land assessed at high dry rates have been carried away into the sea, and the river now rules supreme over those sites. The action of the groynes, many of which had been in existence for thirty years previously, was not only to protect the river margin from erosion, but to train the river and confine it to a normally-established bed-width throughout its course. The removal of these controlling influences, therefore, amounted to nothing more than retreating before the onsets of the river at those points where from time immemorial they were more determined, and with each retreat on our part the attacks of the river became more accentuated,

with the result that enormous bays have now been formed at points where in times past a fairly good alignment of margin had been strenuously maintained.

2. In the Eastern delta two sets of great magnitude have established themselves. The one at Koolla in the 21st mile of the Bank canal was in the recollection of the undersigned long before he joined the district clearly recognized, and protective measures by means of groynes organized and maintained. No retreat was thought of before the advances of the river, and the series of groynes laid down by his predecessors was carefully kept in repair by him. Since the orders were brought in to do away with groynes however, an enormous bay of more than one mile in length has resulted and fully 700 feet of lunka at the widest part has disappeared.

3. The set at Masakapilly is a still more formidable one, and the policy of masterly inactivity that obtained during the last decade has brought about the sequestration in favour of the river of at least 1,200 feet in greatest width of lunka of more than a mile in length, whilst a very large expenditure has been incurred in carrying out no less than three diversions of the Bank canal in this locality. These latter were sanctioned, unauthorizedly, under Revenue, Maintenance and Repairs by the Superintending Engineer for the time being, their incidence legitimately falling on the Capital Account. Had the sanctions been made by the Government as would have been done if the latter procedure had been followed, there is no doubt the evil that was being done would have attracted attention, and efficient steps been taken to deal with the question.

4. As matters now stand, the Government must be prepared to incur an expenditure amounting to lakhs of rupees to recover the ground lost during the past ten years. The best method, in the opinion of the undersigned, of doing this is by a large earthen groyne, revetted and pitched somewhat after the method long in force in the Tanjore delta thrown across the head of the deep channel of the river set, and supported by others at smaller or great intervals. This method is now being followed at the Nagalunka set on the Gunnaram canal, and was adapted by the present Superintending Engineer after having seen the highly successful results obtained by two similar groynes constructed by the undersigned in 1875–76 at the Kovoor set on the right bank of the river above the anicut. No temporising policy must in the future be followed, but a bold front should be shown to any attempt of the river to encroach or depart from the course which it is deemed right it should follow. It will no doubt be a hard battle now to fight with the subtle element. What was originally effected by quiet persuasion has now to be secured by a hand-to-hand contest. The struggle will be a hard and expensive one, but it is hoped that in a series of years the valuable ground which has been lost will be regained, and the training of the river be taken up from that point systematically,—a point that, in the case of the Gódávari, has unfortunately been too long lost sight of.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

Ootacamund,
21st August 1895.

Order—No. 877 I., dated 28th October 1895.

Communicated to the Superintending Engineer, I Circle, for information and guidance.

2. The Government regrets to hear the disastrous results of the policy adopted during the past ten years in dealing with river sets in the Gódávari delta. The method now advocated by the Chief Engineer for Irrigation for recovering lost ground is approved.

3. The diversions of the Bank canal referred to ought not to have been charged to "Revenue, Maintenance and Repairs" but to "Capital," in accordance with paragraph 36, chapter V, Volume II, Public Works Department Code. The Superintending Engineer will see that, in future, the sanction of Government is obtained to all outlay on improvements exceeding Rs. 1,000 for "Works."

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" " " II "
" " " V "
" " " VI "
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 28th.

Recd. *Encl.*

G.O. No. 877 I., 28th Oct. 1895.

OCTOBER.

River Sets in the Godavari Delta

The method advocated by the Chief Engineer for Irrigation in the matter of dealing with —, approved with remarks, and that officer's note on the subject, communicated to Superintending Engineer, I Circle, for guidance.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

Office-note from the Assistant Chief Engineer for Irrigation, Tank Restoration Scheme, dated Madras, 18th October 1895, No. 1304 T.

The following estimates, amounting to Rs. 660, having been sanctioned by this office to meet the cost of new supplies, repairs and carriage of tools and plant in Nos. 4 and 5 parties, Tank Restoration Scheme, for the current year, I request you will be good enough to allot the necessary funds:—

No. 4 Party, Tank Restoration Scheme (Salem District).

		RS.
Repairs and carriage of tools and plant		235

No. 5 Party (North Arcot District).

	RS.	
Cost of levelling instrument supplied by General Superintendent, Public Works Stores, on letter No. 507 T., dated 26th April 1895, from this office	225	
Repairs to tools and plant for 1895–96	200	
		425
Total ...		660

ORDER—No. 878 I., dated 28th October 1895.

Rupees 277 of the allotment of Rs. 660 applied for under tools and plant for Nos. 4 and 5 Tank Restoration Parties are appropriated from the existing balance of the current year's grant for special tools and plant, Tank Restoration Scheme, the balance of the amount required, viz., Rs. 383, being met by transfer from the reserve under "43. Agricultural works" as shown below:—

	RS.
Repairs	307
Establishment	71
Tools and plant	5
Total ...	383

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Chief Engineer for Tank Restoration Scheme.
„ Examiner, Public Works Accounts.
„ Superintending Engineer, IV Circle.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 28th.

Recd. *Encl.*

G.O. No. 878 I., 28th Oct. 1895.

OCTOBER.

Tools and Plant

The sum of Rs. 660 provided under —
for Nos. 4 and 5 Tank Restoration Parties.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From the Executive Engineer, Buckingham Canal Division, to the Superintending Engineer, II Circle, dated 2nd September 1895, No. 1325.

With reference to your endorsement No. 172 B.C. of 27th August 1895, on G.O. No. 625 I. of 9th August 1895, in paragraph 4 of which Government enquire as to whether the balance of grant required to meet the cost of a dredger can be met by a transfer from the grant for works, I have the honour to reply in the negative, as all the works on which the grant for works has been distributed have been put in hand and have made considerable progress already. Any reduction of these grants for individual works cannot but result in a loss which is always attendant upon temporary cessation of works which have made good progress.

2. Out of the grant of Rs. 20,300 sanctioned under Capital, Tools and plant for this year, there is now only a balance of Rs. 9,265 available, as was already fully explained in my letter No. 1040 of 12th August 1895. Since writing this letter, cotton belting has had to be purchased on emergency, and the sum now available may be taken at the round figure Rs. 9,000.

3. The amount that has to be provided now for the dredger is thus Rs. 21,000.

No. 207 B.C.

Forwarded to the Chief Engineer for Irrigation, with reference to paragraph 4 of G.O. No. 625 I., dated 9th August 1895.

2. It is recommended that the balance required for the dredger be transferred from the grant of two lakhs allotted for the canal from Madras Harbour to Madras basin. The estimates for this work are not yet ready; sanction to start work can hardly be expected before December next; and it is not likely that the full grant of two lakhs can be spent.

(Signed) C. A. SMITH,
for Suptg. Engineer, II Circle.

17th September 1895.

No. 245.

Note by the Chief Engineer for Irrigation.

In G.O. No. 26, dated 12th January 1895, Financial Department, a sum of rupees two lakhs was assigned for expenditure during the current year on the canal from the north side of the Madras Harbour to the basin in the Buckingham canal. With reference to endorsement No. 207 B.C., dated 17th instant, of the Superintending Engineer, II Circle, please say whether any, and, if so, what part of this grant can be utilized on other works.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

26th Sept. 1895.

No. 3007 C.

[Your office-note No. 245, dated 26th September 1895.]

It is impossible to say at present, but no portion of the grant of two lakhs can now be given up.

(Signed) J. PENNYCUICK, Colonel, R.E.,
Chief Engineer, P.W.D.

19th October 1895.

ORDER—No. 879 I., dated 28th October 1895.

The additional grant of Rs. 21,000 required for the Buckingham canal under Capital account, Tools and plant, is appropriated from the reserve under "43. Agricultural works" as shown below:—

	RS.
Repairs	16,868
Establishment	3,879
Tools and plant	253
Total ...	21,000

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 28th.

Recd. *Encl.*

G.O. No. 879 I., 28th Oct. 1895.

OCTOBER.

Buckingham Canal

The additional grant of Rs. 21,000 required for the — under Capital account, Tools and plant, appropriated from the reserve under "43. Agricultural works."

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

MADRAS PRESIDENCY.

SIX MONTHS' ESTIMATE for the year 1895–96.

Irrigation Branch.

Table I.

Particulars.	Actuals, 1894–95.				Budget estimate, 1895–96.			
	Imperial.	Provincial.	Incorporated Local.	Total.	Imperial.	Provincial.	Incorporated Local.	Total.
1	2	3	4	5	6	7	8	9
REVENUE.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
XXIX. Major works—								
Direct receipts	2,90,169	..	..	2,90,169	2,80,000	..	..	2,80,000
Portion of Land Revenue due to Irrigation ..	* 53,17,614	..	..	53,17,614	65,90,000	..	..	65,90,000
XXX. Minor works and Navigation	..	1,65,884	..	1,65,884	..	1,79,000	..	1,79,000
EXPENDITURE.								
35. Construction of Protective Irrigation works	3,09,726	..	..	3,09,726	3,00,000	..	..	3,00,000
42. Major works—								
Working expenses ..	11,12,054	..	..	11,12,054	11,92,000	..	..	11,92,000
Interest on debt	23,29,876	..	..	23,29,876	..	..	..	..
43. Minor works and Navigation	..	29,37,487	10,484	29,47,971	..	33,52,000	8,000	33,60,000
49. Irrigation works, Capital expenditure not charged against Revenue	14,14,405	..	..	14,14,405	11,50,000	..	..	11,50,000

Particulars.	Six months' estimate, 1895–96.				Budget estimate, 1896–97.			
	Imperial.	Provincial.	Incorporated Local.	Total.	Imper .	Provincial.	Incorporated Local.	Total.
	10	11	12	13	14	15	16	17
REVENUE.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
XXIX. Major works—								
Direct receipts	2,91,500	..	..	2,91,500	2,91,500	..	..	2,91,500
Portion of Land Revenue due to Irrigation ..	65,90,000	..	..	65,90,000	65,90,000	..	..	65,90,000
XXX. Minor works and Navigation	..	1,79,000	..	1,79,000	..	1,79,000	..	1,79,000
EXPENDITURE.								
35. Construction of Protective Irrigation works	3,00,000	..	..	3,00,000	..	..	..	..
42. Major works—								
Working expenses ..	11,92,000	..	..	11,92,000	..	..	..	..
Interest on debt	23,83,021	..	..	23,83,021	..	..	..	..
43. Minor works and Navigation	..	33,57,260	21,289	33,78,549	..	33,00,000	20,000	33,20,000
49. Irrigation works, Capital expenditure not charged against Revenue	12,40,000	..	..	12,40,000	..	..	..	..

* Excludes the revenue of the Trichinopoly taluk Cauvery delta system promised by the Board of Revenue by the end of November 1895.

SIX MONTHS' ESTIMATE for the year 1895-96.

Irrigation.

Table II.

Particulars.	Actuals, 1894-95.	Budget estimate, 1895-96.	Six months' estimate, 1895-96.	Budget estimate, 1896-97.
CAPITAL EXPENDITURE ON PUBLIC WORKS NOT CHARGED AGAINST REVENUE.				
In India.	RS.	RS.	RS.	RS.
Gódávari delta system	5,129	13,000	13,000	..
Kistna do.	4,07,775	4,48,000	5,38,000	..
Cauvery do.	6,530	20,000	20,000	..
Srívaikuntam anicut system	3,722	1,540	1,540	..
Penner do.	1,272	4,000	4,000	..
Sangam do.	30,991	17,000	17,000	..
Kurnool canal	— 801	..	..	..
Barur tank project	..	2,460	2,460	..
Periyár project	9,59,787	6,44,000	6,44,000	..
Total ..	14,14,405	11,50,000	12,40,000	..
In England.				
Gódávari delta system	..	..	..	..
Kistna do.	..	..	..	..
Cauvery do.	..	..	..	..
Srívaikuntam anicut system	..	..	..	..
Penner do.	..	..	..	..
Sangam do.	..	..	..	..
Kurnool canal	..	..	..	..
Barur tank	..	..	..	..
Periyár project	..	..	..	..
Total ..	..	..	..	..
INTEREST PAYABLE BY PROVINCIAL GOVERNMENT TO THE IMPERIAL TREASURY.				
Gódávari delta system	4,36,645	..	4,37,008	..
Kistna do.	4,25,199	..	4,44,114	..
Cauvery do.	66,299	..	66,830	..
Srívaikuntam anicut system	54,330	..	54,436	..
Penner do.	65,472	..	65,578	..
Sangam do.	1,23,298	..	1,24,258	..
Kurnool canal	8,67,708	..	8,67,748	..
Barur tank	15,879	..	15,928	..
Periyár project	2,75,046	..	3,07,121	..
Total ..	23,29,876	..	23,83,021	..

(Signed) F. W. EICKE,
for Examiner, Public Works Accounts, Madras.

No. 182 I.

Note by the Chief Engineer for Irrigation.

With his office-note No. 3491 C., dated 5th October 1895, the Examiner of Public Works Accounts has forwarded estimates of revenue and expenditure in the Irrigation Branch for the current year based on the actuals for the first five months of the year and on the average of the preceding three years for the remaining months.

2. He suggests that the estimate of direct receipts from Major works be fixed at Rs. 2,91,500 as the actuals of the three preceding years closely approximate to this amount and as they have also invariably exceeded the sum of Rs. 2,80,000 set down as the estimate for the current year. The Examiner's estimate may be adopted.

3. The Examiner suggests that no change be made for the present in the budget estimate of direct receipts from Minor works and Navigation, any alterations that may be necessary being considered when fixing the revised estimates for the current official year with reference to the current year's actuals then available.

4. The Examiner's estimate of expenditure indicates the necessity for an increase of the grants under "42. Major works (Working expenses)," "43. Minor works and Navigation, Local," and "49. Capital expenditure not charged to Revenue."

5. In Proceedings of Madras Government, No. 739/A I., dated 12th September 1895, an additional grant of Rs. 73,000 for the Kistna delta system under "42. Major works (Working expenses)" was applied for but has not yet been sanctioned by the Government of India.

6. No action need be taken with regard to the probable increase of expenditure under "43. Minor works and Navigation, Local," as the Superintending Engineers concerned have not yet intimated the necessity for increasing the existing grants under this head.

7. Under "49. Capital expenditure not charged to Revenue" the budget grant has been augmented by the Government of India to the extent of Rs. 90,000 in its telegram No. 68 A.I., dated 1st October 1895.

8. The expenditure under "35. Protective works, Irrigation," up to the end of August was below the average. The short outlay is due to continuous rains and to cessation of earthwork on the Suradá reservoir dam owing to the difficulties experienced in carrying out the work. In this office memo. No. 41 G.N., dated 3rd October 1895, the Superintending Engineer, I Circle, was informed that all the contemplated outlay on this reservoir for the current year may be stopped and the money surrendered if not required for expenditure on other component works of the Rushikulya project.

9. With regard to the short outlay apprehended by the Examiner under "43. Minor works and Navigation, Provincial," it may be noted that in this office circular memo. No. 19 G., dated 9th September 1895, reviewing the outlay incurred up to end of July 1895, instructions have already been given to Superintending Engineers to see that proper arrangements are made for proceeding with works in the succeeding months of the year in all those divisions in which the progress during the first four months has not been satisfactory.

10. The estimates for the ensuing official year have not yet been fixed and the amounts entered are only rough approximations. The probable demands on Imperial funds for 1896–97 have not been entered with reference to paragraph 119, chapter IV, volume II, Public Works Department Code.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

9th October 1895.

ORDER—No. 880 I., dated 29th October 1895.

The statements showing the six months' estimate of receipts and expenditure in the Irrigation Branch for 1895–96 and the rough estimate for 1896–97 will be submitted to the Government of India.

[Here enter No. 881 I., dated 29th October 1895.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineers.
" the Superintendent of Works, No. I Periyár Division.
" the Examiner, Public Works Accounts.
" the Revenue Department.

ENDORSEMENT—No. 881 I., dated 29th October 1895.

Forwarded.

(By order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 29th.

Recd. *Encl.*

G.O. Nos. 880, 881 I., 29th Oct. 1895.

OCTOBER.

Six Months' Estimate

Forwarding Proceedings embodying the statements showing the — of receipts and expenditure in the Irrigation Branch for 1895–96 and the rough estimate for 1896–97.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From S. D. PEARS, Esq., Superintendent of Works, No. I Periyár Project, to the Chief Engineer, Public Works Department, dated Periyár, 15th October 1895, No. 114 C.E.

PROGRESS REPORT FOR SEPTEMBER 1895.

General.—The month has been an entirely uneventful one, for which the briefest possible report of progress will suffice.

Rainfall.—At Periyár 4·32 inches, at Thekady 1·20 inches, against an average (for six previous years) of 4·58 and 4·15 inches, respectively.

Health.—The hospital statistics for the month are given below. The admissions for fever continued to be rather unusually numerous, but in general health the month was an improvement as compared with August.

Camp.	Average population.	Daily average attendance.	Total treated.	Ratio sick to 1,000 of population.	Deaths.	Ratio deaths to 1,000 of population.
Periyár	3,596	105·73	1,363	379·03	7	1·94

Main dam.—The large outturn of rubble in August was further increased in September and the average level of the work advanced by about 9 feet as shown in the accompanying sections. The actual quantities put in during the month were—

	C. FT.
Concrete	49,339
Rubble	98,894
Total ...	148,233

The thickness of the work has now nearly diminished to its minimum of 12 feet, and the difficulty of laying concrete in the narrow passage between the rubble front and rear walls while maintaining in the same passage the heavy traffic connected with the rubble is becoming such that it will probably be necessary before long to stop the concrete work altogether and to complete the dam with rubble only, at first carrying traffic along the front and rear walls while the core is built up, and then carrying the traffic along the middle while the front and rear are advanced.

Left bank escape.—The rubble front wall of this work was taken up to + 143 during the month and the concrete and rubble behind it to an average of + 132. The Chief Engineer's decision in regard to the fault in the site of the proposed rear wing of this work noticed in last month's report, was that the wing should be abandoned and the earth, which it was to have held up, allowed to take its own slope ; the work has accordingly been pursued on these lines, and 69,532 cubic feet of earthwork was accomplished towards the filling in in rear of front wing. The quantities added to the body of the work were—

	C. FT.
Rubble	44,584
Concrete	15,837
Total ...	60,421

The same considerations with regard to the abandonment of a concrete core at the higher levels apply here as on the main dam.

Watershed tunnel.—The measuring weir at the north end of the tunnel was finished during the month under review. The main gates of the regulating sluices were advanced a stage nearer to completion, but will not be ready for use before December. The subsidiary gates, however, designed to facilitate the repairs of the main gates were practically completed and will be ready for use on the date fixed for the opening of the works by His Excellency the Governor of Madras.

Miscellaneous.—The launch purchased recently from Messrs. Burn and Co., and propelled by an eight-brake horse-power oil-engine constructed by Messrs. Vosper and Co., Portsmouth, was completed and brought into use during September. Both boat and engine worked very satisfactorily on the whole, notwithstanding a few defects of constuction in the engine, which will shortly be reported on separately.

Note by the Chief Engineer, Public Works Department.

Submitted for the consideration and orders of Government.

2. The formal opening of the works having taken place during October, the report for that month which will be due shortly will form a convenient occasion for a review of the whole operations and of the services of the officers employed therein; it is therefore unnecessary to remark on the present report, further than to notice that the progress continues eminently satisfactory, the total quantity of work executed in the main dam and left bank escape—the latter being now practically a continuation of the former—exceed that of any previous month, having for the first time exceeded 200,000 cubic feet.

(Signed) J. PENNYCUICK, Col., R.E.,
Chief Engineer, P.W.D.

Order—No. 882 I., dated 29th October 1895.

Recorded and forwarded to the Government of India.

[Here enter No. 883 I., dated 29th October 1895.]

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent of Works, Periyár Project.
,, Chief Engineer for Irrigation.
,, Revenue Department.

Endorsement—No. 883 I., dated 29th October 1895.

Forwarded.

(By order.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 29th.

Recd. *Encl.*

G.O. Nos. 882, 883 I., 29th Oct. 1895.

OCTOBER.

Periyar Project

Forwarding Proceedings on the progress report of works in No. I Periyár division for September 1895.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From W. HUGHES, Esq., Superintending Engineer, VI Circle, to the Chief Engineer, Public Works Department, dated Trichinopoly, 21st September 1895, No. 532 M.D.

I have the honour to submit an estimate for a permanent rest-house at Therkutheruvu, 13 miles from Madura on the Mélúr road. The reasons for proposing to build a bungalow at this place are explained in the Executive Engineer's report attached to the estimate.

2. The building is in lieu of a rest-house at Chittampatti, for which a sum of Rs. 3,040 is provided in the revised estimate for the project. The estimate of Rs. 1,430 sanctioned* last year for a small rest-house at Chittampatti will be cancelled.

* Register No. 147 of 1893–94.

ENCLOSURE.

REPORT to accompany estimate for constructing a bungalow with out-houses at Therkutheruvu, near the 13th mile from Madura to Mélúr road.

	RS.
Amount of estimate	3,150

An estimate was sanctioned in Register No. 147 † for Rs. 1,430, for a shed at Chittampatti. This was not built as there was no need for a shed here, as the works near it were completed and, moreover, could be inspected from Madura.

† Register No. 147 of 1893–94 of late No. 2 Periyár division.

2. The accompanying sketch shows the position of the channels. A permanent rest-house is required about the 13th mile of Mélúr road for the 10th and 11th branch channels, which are too far to be inspected from Mélúr or Madura. These portions of the Periyár works are the only ones which are not within reach of rest-houses.

3. The proposed rest-house will be required for general inspection purposes after the project works are completed. As all other portions of these works are within reach of substantially built and commodious rest-houses, a similar building is required for the outlying works shown in the accompanying tracing. The original estimate and plans alluded to in paragraph 1 are herewith returned, from which it will be seen that very little accommodation and shelter is provided.

(Signed) J. H. MEDLICOTT,
Executive Engineer.

17th July 1895.

ORDER—No. 884 I., dated 29th October 1895.

The following estimate is sanctioned in lieu of the estimate of Rs. 1,430 previously sanctioned, Rs. 3,040 of the proposed outlay being met from the provision made for item 562 A. of the revised estimate printed in Proceedings of Madras Government No. 97 I., dated 3rd February 1894, and the balance Rs. 110 from the

amount available for unforeseen works of the Periyár project at the disposal of the Superintendent of Works, No. I Periyár Division.

Capital expenditure not charged to Revenue.
49. Irrigation.
Periyár Project.
I. Works.
3. Distributaries.
II. Buildings.

	RS.
Constructing a bungalow with out-houses at Therkutheruvu, estimate ...	3,150

2. This sanction is registered as No. 118 I. of 1895–96.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintendent of Works, No. I Periyár Division.
" Superintending Engineer, VI Circle, with five enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 29th.

Recd. *Encl.*

G.O. No. 884 I., 29th Oct. 1895.

OCTOBER.

Bungalow

Estimate of Rs. 3,150 for constructing a — with out-houses at Therkutheruvu, Madura division, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers :—

Telegram from the Executive Engineer, Kistna Eastern Division, to the Chief Engineer for Irrigation, dated Bezwada, 9th September 1895.

Ellore canal seriously breached many places. Believed not much damage to masonry works. Will take two months to re-open this canal. Ryves' canal also breached, not very badly. Require three extra subordinates urgently. Letter follows.

From A. S. RUSSELL, Esq., Officiating Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezwada, 19th September 1895, No. 1318 K.S.

In continuation of the telegram sent to you by the Executive Engineer, Kistna Eastern Division, reporting serious damages to Ellore and Ryves' canals, I have the honour to submit the following condensed report embodying all information received up to date.

2. On 5th instant, heavy rain set in over the Kistna district and continued throughout the night—about four-fifths of the total fall occurring during the hours of night. The rainfall was of a cyclonic character and is reported to have been in excess of previous known records. The point of greatest intensity was Jagerlamudi, 9th mile, Commamur canal, where the fall was 11·75″. At Bezwada 10·8″ was registered against a previous known maximum of 7·1″ in 24 hours. As communication with Ellore is still quite cut off both by canal and railway, the rainfall registered there is not yet known, but it is stated to have been *less* than at Bezwada. At Duggirala the fall was 8·50″, and was considerably less towards the end of the Commamur canal.

3. The Kistna Western Delta division has practically escaped damage, nothing of any consequence being reported. Serious flooding of wet lands has occurred, and probably a great deal of damage has been done to young crops, since in many places the ryots, owing to the water-rate agitation, started cultivation unusually late, and the young crops will be unable to stand submergence.

4. Reports from the Kistna Northern division state that six tanks have breached, the breaches in two tanks being slight. So far as is yet known, this comprises the damage done in this division.

5. The Kistna Eastern division has suffered severely, but the damage is now stated by the Executive Engineer to be not so serious as was at first thought and reported by telegram to you. All lands will probably be re-opened both for irrigation and navigation by the end of this month. Mr. Smith and his subordinates have been hard at work, repairing damages ever since they occurred; and have consequently been unable to submit as yet any detailed report of what has happened. From personal inspection and enquiries from Mr. Smith, I have been able to gather the following particulars regarding the damages that have been done.

6. The Budameru, Ramileru and Tamileru all came down during 6th instant in flood exceeding that of any previously known record, and caused numerous breaches in the Ellore canal, and also some breaches of a much less serious character in Ryves' canal. It was in fact fortunate that Ryves' canal breached freely, as this saved the Pulleru and canals below from damage. No serious damage to masonry works is anywhere reported, but distributaries are badly breached, as it was of course necessary to open all sluices and try and save the main canals and their masonry works. The extraordinary rise of the floods in the Budameru and Tamileru may be gauged from the fact that the former river topped the left bank of the Ellore canal for a considerable distance in the 3rd mile from Bezwada and ran $3\frac{1}{2}$ feet deep over the side walls of the aqueduct in the 8th mile, and that the latter river passed 3 feet depth of water over the top of the flood gates across the canal.

7. The damages done to the Ellore and Ryves' canals, together with the steps taken to repair them, will now be reported in consecutive order from the head of the canals.

On 6th instant, the Budameru breached the left bank of the Ellore canal, opposite milestone 3, at the site of an old breach, to a width of 150 feet and to a great depth, and thence breached into Ryves' canal one mile lower down, viz., at 4th mile of Ellore canal. An enormous volume of water passed through this breach, and is the cause of whatever damage has occurred, and is now occuring, in the Gudivada and Nuzvid taluks. As the rainfall over all the Kistna Eastern delta averaged 8″ to 9″, which was alone more than sufficient to fill all channels and drains, and on the top of this came the flood from the Budameru, it is matter of satisfaction that the damages are, as already stated, confined to breaches. The town of Gudivada was flooded by the Chendraya drain, which necessitated the cutting of the Gudivada and Dosapod channels. The breaches have since been closed or ring-bunded, and no loss of crops has occurred. In the Cowtaram sub-division the damage is confined to submergence. The regulator at the head of Ryves' canal is closed to supply, and most of the breaches in that channel have now been repaired, only one bad one remaining to be closed, which cannot be done until the big breach at mile 3 of the Ellore canal is finally closed. Both the Pulleru canal and Ryves' canal lower down are supplied from the Bunder canal, which suffered very little damage, only two breaches occurring in it, which were promptly closed.

8. *Breach from Budameru at mile* 3, *Ellore canal left bank.*—This breach is still not closed, but its final closing now is only a question of two or three days. Mr. Smith cross-bunded the Ellore canal about 100 yards above the breach, and promptly started work on 7th instant to close the breach from the Budameru. He originally anticipated that the breach would have been closed several days ago, and has been within an ace of doing so two or three times, but constant rain and repeated freshes in the Budameru have prevented its successful closing. I visited the work twice yesterday. A very rapid current is still pouring through the breach, and rain is still going on over the catchment of the Budameru. Owing to the depth of the water and the rapidity of the current, pile-driving has to be done from ballacuts moored by ropes attached to the shore, and the work is thus necessarily both difficult and tedious. Mr. Smith has been himself all day long on the work of closing this breach ever since it occurred; has spared no pains to carry it to a successful result; and it has been no fault of his that hitherto he has not succeeded. It is of the first importance that this breach shall now be rapidly closed, and the flood waters from the Budameru thus prevented from pouring into the Ellore canal and thence into Ryves' canal. As regards supply to crops, it is probable that more damage is being done by submergence than from short supply.

9. From 4th mile of the Ellore canal to the Kesarapalli aqueduct in 11th mile, there are numerous breaches, most of which have now been closed. From 11th mile to 19th mile there are 27 breaches, which have now mostly been closed. Up to 14th mile, the breaches are due to the flood water from the Budameru, but beyond this they are mainly due to floods from the Ramileru and Tamileru. From 19th to 27th mile there are 34 breaches, which have now for the greater part been ring-bunded. At 27th mile the canal breached both its banks on both sides of the Perikeed under-tunnel, the banks being carried away for a length of 350 feet.

Between 27th mile and Ellore the breaches are very numerous, and are stated to be no less than 133 on right bank though, doubtless, the great majority of these are quite small. Communication from Bezwada with this part of the canal is quite cut off. Tappals come in very slowly, and there is no way at present of getting there except by walking across the paddy fields and climbing up and down the numerous breaches. The Sub-division officer who was at Bezwada when the breaches occurred, did not succeed in getting to Ellore for several days and is still at that end of the canal, though reports received from him are to the effect that the repairs are going on satisfactorily; that the two overseers sent from the Gódávari joined some days ago; and that the Ellore canal can be re-opened by the end of the month. Further damages near the town of Ellore are, the silting of the canal bed for 1½ furlongs above and 2½ below West Tamileru escape in 37th mile, and cutting of the canal banks by the Tahsildar and Municipality in order to relieve the town of Ellore.

10. *Masonry works.*—Along the whole length of the Ellore canal, as on other canals, the masonry works are all *intact* and have suffered no serious damage.

11. *Rates for repairs and progress of repairs.*—The competition with the railway (the latter, so far as I can learn, being more or less a wreck over the whole length of the Ellore canal) is very severe, and the payment of abnormally high rates is a necessity if the repairs are to be promptly done. Owing to the exertions made by Mr. Smith and his staff, labour is coming in well and the repairs are making good progress.

12. *Extra grant required for repairs.*—It is as yet impossible to say what amount of extra funds will be required for expenditure on repairs this official year. I have asked the Executive Engineers to inform me, as soon as they can do so, what sums they will require. Roughly, they state it will probably be Rs. 30,000. A good deal of work in repairs will be done from the grant for next year, as permanent restoration of the damages on the Ellore canal will have to be deferred until next year's closure of canals.

13. Numerous enquiries are pouring in requesting information when the Ellore canal will be again opened for traffic, all communication by rail with the Gódávari district being absolutely suspended; and inquirers have been informed that the Ellore canal will be fit for navigation at the end of this month.

Telegram from the Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Madras, 30th September 1895.

Ryves' canal re-opened 25th. Ellore canal 28th.

From A. S. RUSSELL, Esq., Officiating Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Madras, 3rd October 1895, No. 1400 K.S.

In continuation of this office letter No. 1318 K.S., dated 20th ultimo, and of my telegram of 30th ultimo, I have the honour to report that water was let down Ryves' canal and Ellore canal on 25th and 28th ultimo, respectively. All breaches have been closed, but some will require careful watching and strengthening, and sufficient water for fully-laden boats can hardly be maintained until 7th or 8th instant. So far as enquiries have yet gone, there is practically no damage to crops for want of water as there have been constant showers. Whenever the canal banks have been most knocked about, there are usually breaches above in the railway embankment, and the latter has undoubtedly aggravated the damages as has already been reported direct to you by the Executive Engineer, Kistna Eastern Division, in his letter No. 2776, dated 28th ultimo.

2. Great credit is due to the Executive Engineer Mr. Smith for the rapidity with which Ellore and Ryves' canals have been opened in spite of serious difficulties. Mr. Smith has not spared himself, and has been so constantly on the move out on

works since the damages occurred that he has, as yet, had no leisure to send in a detailed official report regarding the damages. I have asked him to do so at an early date, and to inform me what extra funds will be required this official year for repair of damages. The amount required for the Kistna Northern division has already been reported to you.

3. The Executive Engineer brings to notice the good work done by the Sub-division officer Mr. U. N. Joyce. It is very creditable that such severe damages should have been made good in three weeks from the date they occurred, and this fact speaks for itself. It is believed that communication by railway between Ellore and Bezwada will not be restored for sometime to come.

4. One of the overseers specially sent from the Gódávari for repair of damages at Ellore is no longer required and has been directed to return to his own division.

No. 184 I.

Submitted to Government for information.

2. The Chief Engineer for Irrigation thoroughly endorses the remarks made by the Superintending Engineer regarding the good work done by Mr. C. A. Smith, Executive Engineer, Kistna Eastern Division, and those working under him.

3. From the Superintending Engineer's letter it appears that a good deal of the damage done to the canals is directly due to the railway which has evidently not been provided with sufficient waterway to pass heavy floods.

MADRAS, (Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
9th October 1895. Chief Engineer for Irrigation.

ORDER—No. 885 I., dated 29th October 1895.

Recorded.

2. The special thanks of Government are accorded to Mr. C. A. Smith, Executive Engineer, and to Mr. U. N. Joyce, Sub-division officer, and to the other subordinates of the Kistna Eastern division for the good work done by them.

3. The attention of the Consulting Engineer for Railways is drawn to paragraph 3 of the note by the Chief Engineer for Irrigation.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
„ Chief Engineer, Public Works Department.
„ Chief Engineer for Irrigation.
„ Consulting Engineer for Railways.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 29th.

Recd. *Encl.*

G.O. No. 885 I., 29th Oct. 1895.

OCTOBER.

Ellore and Ryves' Canals

Reports of the serious flood damages to the — and of their having been re-opened for traffic, recorded; the special thanks of Government accorded to Mr. C. A. Smith, Executive Engineer, and to his subordinates for the good work done by them; and the attention of the Consulting Engineer for Railways drawn to the remarks of the Chief Engineer for Irrigation as to the damage being due to the insufficient waterway provided by the railway for passing floods.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

Telegram to the Executive Engineer, Kistna Eastern Division, dated 25th September 1895.

From C. A. SMITH, Esq., Executive Engineer, Kistna Eastern Division, to the Chief Engineer for Irrigation, dated Kistna, 28th September 1895, No. 2776.

With reference to your telegram of 25th instant, I have the honour to state that I am of opinion that the damage to the Ellore canal has undoubtedly been aggravated by the water being first held up by the railway embankment and then suddenly set free by its breaching.

2. The greatest damage to the canal has been opposite to these breaches in the railway bank; but I will give more detailed information on this point in my report on the floods.

ORDER—No. 886 I., dated 29th October 1895.

Communicated to the Consulting Engineer for Railways in continuation of G.O. No. 885 I., dated 29th October 1895.

2. The further report promised will, in due course, be also communicated to him.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
„ Consulting Engineer for Railways.
„ Chief Engineer for Irrigation.
„ Chief Engineer, Public Works Department.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 29th.

Recd. *Encl.*

G.O. No. 886 I., 29th Oct. 1895.

OCTOBER.

Ellore Canal

Letter from the Executive Engineer, Kistna Eastern Division, stating that the damage to the —, caused by the recent floods, has been aggravated by the East Coast Railway embankments, communicated to the Consulting Engineer for Railways with remark.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From A. H. GARRETT, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 21st October 1895, No. 1640 G.D.

I have the honour to submit, herewith, a statement showing the works and grants of the Gódávari Western division pertaining to the Irrigation branch and to request that you will be good enough to arrange for the transfer of grants therein entered from the Western to the newly constituted Gódávari Central division.

2. The modifications proposed by the Assistant Engineer, Gódávari Central Division, have also been shown in the statement.

ENCLOSURE.

IRRIGATION.

STATEMENT showing the grants proposed to be transferred to the new Gódávari Central Division and modifications proposed.

Item number.	Budget and financial head.	Name of work.	Amount of estimate.	Existing grant of the old Gódávari Western division.	Grant proposed for the new Western division.	Grant proposed for the new Gódávari Central division.	Modifications proposed for the new Gódávari Central division. Increase.	Modifications proposed for the new Gódávari Central division. Decrease.	Net grant that will stand after modifications for the new Gódávari Central division are sanctioned.	Remarks.
1	2	3	4	5	6	7	8	9	10	11
			RS.	RS.	RS.	RS.	RS.		RS.	
1	49. Capital expenditure not charged to Revenue.	Constructing an under-tunnel to pass Bondacodu drain under Magam channel.	4,250	2,882	..	2,882	..	..	2,882	The expenditure on this work during the year up to end of August 1895 is Rs. 2,956. The excess will be met from item No. 2 on receipt of further application from the Assistant Engineer, Central Division.
2	Do. do.	Reserve for land	..	1,900	1,079	821	..	..	821	
3	42. Major works, Working expenses.	Extensions and improvements, lump sum ..	..	10,000	8,438	1,562	..	..	1,562	
4	Do.	Maintenance and repairs	..	1,40,000	1,06,853	33,147	6,853	..	40,000	Mr. Honby states that full budget allotment (Rs. 40,000) is required for works in the Central division.
5	Do.	Tools and plant	..	12,500	8,358	4,142	..	..	4,142	
6	43. Agricultural works, Major.	Diversion of Vasista left bank at Ramachandrapur set.	23,700	3,000	..	3,000	..	..	3,000	
7	Do.	Raising right tank of Bendamurlanka canal from Indupalli weir to Venkalagaram breach.	6,270	826	..	826	..	..	826	
8	Do.	Diversion of Gowtami right bank at Merlapalam set.	20,400	1,000	..	1,000	..	..	1,000	
9	Do.	Raising Vasista left bank from head to junction of Gunnavaram canal.	33,500	6,000	..	6,000	..	..	6,000	
10	Do.	Diverting Vainateyam right bank along Paserlapudi channel left bank.	16,000	5,000	..	5,000	..	..	5,000	
11	Do.	Protecting Vasista left bank at Nagullanka set.	3,870	1,000	..	1,000	..	..	1,000	
		Total, Agricultural Major works ..	..	16,826	..	16,826	..	..	16,826	
12	Agricultural Minor original works.	Lump sum	..	1,000	82	918	668	..	1,586	The additional grant is required to complete the work "Kattinga outfall sluice" which is now in progress.
13	Agricultural repairs.	Lump sum	..	17,000	3,378	13,622	20,000	..	33,622	The additional grant of Rs. 20,000 is required for urgent work at river sets (please see this office telegram No. 55 T., dated 19th October 1895).

N.B.—Grants which purely relate to the Gódávari Western division and which are not affected by the separation of the new Gódávari Central division are not shown in this statement.

Order—No. 888 I., dated 30th October 1895.

The modifications of grants proposed in columns 6 and 7 of the statement appended to the foregoing letter are sanctioned.

2. There are no funds available to meet the demand for an additional allotment of Rs. 6,853 required for item 4, Gódávari Central division.

3. Rupees 668 required for item 12, Gódávari Central division, are appropriated from the reserve under "43. Agricultural works—Repairs."

4. The additional grant of Rs. 20,000 required for item 13 has already been sanctioned (*vide* G.O. No. 872 I., dated 26th October 1895).

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 30*th.*

Recd. *Encl.*

G.O. No. 888 I., 30th Oct. 1895.

OCTOBER.

Funds

The proposed modification of grants for works in the Gódávari Western and the newly constituted Gódávari Central divisions, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

From A. H. GARRETT, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 31st August 1895, No. 553 G.N.

I have the honour to submit herewith, for sanction, plans and estimates amounting to Rs. 19,460 for "No. 15 distributary, Rushikulya canal."

2. A list of works on the distributary, with amount of estimate, is herewith enclosed.

3. It will be seen from the accompanying report that the channel is at present designed to supply 5,000 acres and the masonry works are capable of supplying the ultimate area of 9,000 acres.

4. Out of the estimate amount of Rs. 19,460, Rs. 880 will be met from the lump sum provision of Rs. 16,148 for irrigation sluices on main canal banks, Rupees 7,380 from the lump sum of Rs. 61,602 for minor masonry works, and Rs. 11,200 from the lump sum of Rs. 1,50,000 for irrigation channels (*vide* items 286, 307 and 315, respectively, of the comparative statement printed with G.O. No. 13 I., dated 10th January 1894).

5. The Executive Engineer states that, in anticipation of sanction, earthwork will be put in hand as soon as the land required is handed over by the Deputy Collector as it is very important to get water down the distributaries as soon as possible.

I have sanctioned the proposal and request your approval of my action.

6. In accordance with your No. 128 I., dated 29th July 1895, printed with G.O. No. 642 I., dated 12th August 1895, the front aprons of the following works have been omitted :—

(1) Sluice to distributary No. 15.
(2) Masonry outlet, $\frac{7}{8}$ mile + 110 feet.
(3) Do. at $4\frac{5}{8}$,, + 440 ,,
(4) Do. at 5 miles 1 furlong + 330 feet.

ENCLOSURES.

Distributary No. 15, Rushikulya Canal.

No. 15 distributary takes off from Rushikulya canal, left bank, at 51 miles 4 furlongs. It runs for its entire length on a contour in single bank.

2. The area commanded is —

	ACS.
Government land	6,449
Inam	2,576
Total ...	9,025 (say, 9,000)

3. The channel is at present designed for 5,000 acres. Sufficient berm is provided to allow of the channel being subsequently widened. The masonry works are designed for the ultimate area 9,000 acres.

4. The duty of a cubic foot of water is taken at 100, and the discharge 9,000 and 5,000 acres are consequently 90 and 50 cubic feet per second.

5. The channel starts 1′ above bed level in main canal to avoid extensive cutting.

6. A statement of reaches in the channel, and of component masonry works is attached.

7. At $1\frac{3}{8}$ mile, the channel crosses the East Coast Railway, and a 10′ culvert has been provided by the Railway authorities.

The channel tails into a tank.

8. No expenditure has yet been incurred except Rs. 360 for lock-spitting, clearing jungle, &c. As soon as the land required is handed over by the Special Deputy Collector, earthwork, if approved, will be put in hand in anticipation of sanction, as it is very important to get water down the distributaries as soon as possible.

9. A branch channel takes off at $4\frac{5}{8}$ miles, left bank, of main distributary, and runs on a ridge for its entire length in double bank. It will irrigate 1,500 acres, and is divided into two reaches. The drop at the head of channel will be fitted with grooves and planks, so as to act as a regulator. The channel will tail over a rough-stone escape with 1′ water.

10. Including the branch channel, the total mileage is 8·87—

	RS.
The cost of earthwork per mile	1,262·68
,, of masonry per mile	931·2
,, of earthwork per acre irrigated	2·24
,, of masonry ,, ,, ...	·917

(Signed) W. DEMORGAN,
Ex. Engineer, Rushikulya Division.

19th July 1895.

Estimate Form—Abstract—Classified.

Sub-head.	Names of works.	Amount of estimate for individual work.	Total of sub-heads.	Total for each canal or distributary.	Total of each main head.
1	2	3	4	5	6
	FAMINE RELIEF AND INSURANCE.	RS.	RS.	RS.	RS.
	35. *Protective Works—Irrigation.*				
	Rushikulya Project.				
	I. Works.				
	Rushikulya Canal.				
	3. Distributaries.				
	Distributary No. 15, from $51\frac{1}{2}$ miles of Rushikulya Canal.				
1. Preliminary expenses.	1. Clearing jungle	100	100 *		
3. Works ..	2. Sluice to distributary	800			
	3. Flush outlet at 2 furlongs and 517 feet	160			
	4. Masonry outlet $\frac{7}{8}$ mile + 110 feet	320			
	5. Flush outlet at 1 mile 6 furlongs + 79 feet ..	310			
	6. Do. at 2 miles 1 furlong + 334 feet ..	220			
	7. Do. at 2 ,, 2 furlongs + 200 feet ..	140			
	8. Do. at 2 ,, 5 ,, + 497 feet ..	370			
	9. Do. at 3 ,, 3 ,, + 9 feet ..	570			
	10. Do. at 4 ,, and 110 feet	390			
	11. Do. at 4 ,, 3 furlongs + 110 feet ..	270			
	12. Masonry outlet at $4\frac{5}{8}$ miles + 440 feet	280			
	13. Do. at 5 ,, 1 furlong + 330 feet ..	180			
	14. Flush outlet at 5 miles 4 furlongs + 261 feet ..	170			
	15. Do. at 6 ,, 1 furlong + 55 feet ..	270			
	16. Do. at 6 ,, 5 ,, + 472 feet ..	170			
	Branch Channel.				
	17. Drop and regulator at head	770			
	18. Do. at $\frac{3}{8}$ mile + 110 feet	860			
	19. Do. at $\frac{7}{8}$ mile	660			
	20. Do. at $1\frac{1}{4}$ miles	620			
	21. Do. at $1\frac{3}{8}$ miles + 220 feet	610			
	22. Terminal escape at end	40	8,260 †		
4. Earthwork.	23. Excavating channel	10,630	10,630 *		
5. Miscellaneous.	24. Fixing demarcation stones	470	470 *		
				19,460	

* To be met from item 315 of the comparative statement.

† Out of this Rs. 880 (1st item) is to be met from item 286 of the comparative statement printed with G.O. No. 13 I., dated 10th January 1894. The remaining Rs. 7,380 is to be met from item 307 of the comparative statement.

No. 174 I.

Submitted to Government with a recommendation that the estimates forwarded by the Superintending Engineer, I Circle, be sanctioned.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

1st October 1895.

ORDER—No. 889 I., dated 30th October 1895.

The estimates, aggregating Rs. 19,460, for No. 15 distributary, Rushikulya canal, are sanctioned, the proposed outlay on item 2 of the classified abstract estimate, items 3 to 22 and items 1, 23 and 24 being met, respectively, from the provision made for items 286, 307 and 315 of the comparative statement printed in Proceedings of Madras Government, No. 13 I., dated 10th January 1894.

2. This sanction is registered as No. 120 I. of 1895-96.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle, with 55 enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.
Editors' Table.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 30th.

Recd. *Encl.*

G.O. No. 889 I., 30th Oct. 1895.

OCTOBER.

Rushikulya Canal

Estimates aggregating Rs. 19,460 for No. 15 distributary, —, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers:—

From A. H. GARRETT, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 28th August 1895, No. 1199 G.D.

I have the honour to submit herewith an estimate of Rs. 2,370 for constructing a cut-stone platform with combined gratings and indicators to Vizeswaram head sluice in place of the existing platform, and to request that sanction of Government may be obtained to the same.

2. The estimate is, under paragraph 37, chapter V, volume II, of the Public Works Code, classified under capital account. The head sluice was charged to this head of account, and the cost of the original platform was considerably less than that of the platform now proposed.

3. The reasons for the preparation of the estimate are given in the report which accompanies the estimate.

4. In the event of the estimate being sanctioned, I request that the full amount thereof may be allotted.

5. The work will be completed before the end of the current official year.

6. The estimate is accompanied by a plan.

ENCLOSURE.

REPORT to accompany the estimate amounting to Rs. 2,370 for constructing cut-stone platform with combined gratings and indicators to Vizeswaram head sluices in place of wooden platform.

The object of the estimate is to provide a durable platform of dressed stone in place of the present wooden one over the Vizeswaram head sluices. This wooden platform is very unsightly and needs constant repair. It is also dangerous. The beams supporting some portions of it have rotten away at the ends in a manner that was quite unexpected, and their dangerous condition was not discovered until the planking was lately removed in carrying out the yearly repairs.

Instead of doing any extensive repairs to the wooden platform, which at least unsightly and in its present exposed condition far from durable, it has been decided to patch it up temporarily, and it is hoped it will soon be replaced by this permanent stone platform.

The piers will be carbelled out square as shown in the drawing, to enable a sufficient wide platform being built over them. Arches of small rise will be turned from pier to pier and the platform will be laid over them.

The openings over the shutters will be covered with cast iron combined gratings with indicators. All the work will be of the very best quality. The intention is that it should be as far as possible perfect and never need repair.

(Signed) A. G. ROMILLY,
Executive Engr., Head Works Sub-Dn.

To the Superintending Engineer, I Circle, dated 13th September 1895, No. 95 G.D.

From A. H. GARRETT, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 5th October 1895, No. 1522 G.D.

With reference to your Memo. No. I./95 G.D., dated 13th September 1895, I have the honour to report that the approximate cost of the original wooden platform of Vizeswaram head sluice is Rs. 700. There are no records either in this or in the Executive Engineer's office to show the actual cost of the original platform.

No. 188 I.

Submitted to Government.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

18th October 1895.

ORDER—890 I., dated 30th October 1895.

The following estimate is sanctioned:—

Capital expenditure not charged to Revenue.
49. Irrigation.
Gódávari Delta System.
Open Capital Account.
2. Main Canals and Branches.
2. Regulators.

Remunerative work—
Constructing a platform to Vizeswaram head sluice.

	RS.
I. Works	2,370
II. Establishment	545
III. Tools and plant	5
Total Estimate ...	2,920

2. This sanction is registered as No. 119 I. of 1895–96, and will expire on the 31st March 1897.

3. The approximate cost of the original platform, viz., Rs. 700, will be written back by the Examiner of Public Works Accounts from the Capital to the Revenue Account of the Gódávari Delta System.

4. There are no funds available for expenditure on the work during the current official year.

5. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

[Here enter No. 891 I., dated 30th October 1895.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle, with three enclosures.
" Examiner, Public Works Accounts.
" Revenue Department.

ENDORSEMENT—No. 891 I., dated 30th October 1895.

Forwarded.

(By order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 30th.

Recd. *Encl.*

G.O. Nos. 890, 891 I., 30th Oct. 1895.

OCTOBER.

Godavari Delta System

Forwarding Proceedings sanctioning, with remarks, estimate of Rs. 2,920 for constructing a platform to Vizeswaram head sluice, —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From A. S. Russell, Esq., Officiating Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated 18th October 1895, No. 1521 K.S.

I have the honour to forward, for your approval and sanction of Government, comparative statement, amounting to Rs. 990, for constructing Drop No. 2 with bridge at 5 miles 1½ furlongs on Medur channel, Masulipatam canal.

2. The original estimate for the work, amounting to Rs. 710, was sanctioned in G.O. No. 573 I., dated 29th June 1893. The excess of Rs. 280 over the original estimate can be met from the balance available for unforeseen works of the Kistna Delta system.

3. The report, which accompanies the estimate, explains the necessity for the revision of the estimate.

Enclosure.

Report to accompany the estimate for constructing Bridge and Drop on Medur Channel.

Estimate ... ... Rs. 990

The bridge and drop on Medur channel was by oversight built without reference to the Local Fund Engineer, who now complains that the width of roadway allowed, *i.e.*, 9 feet, is insufficient and has asked for it to be increased to 14 feet.

2. The present estimate provides for this work.

Order—No. 899 I., dated 31st October 1895.

The following revised estimate is sanctioned in supersession of the estimate of Rs. 710 sanctioned in G.O. No. 573 I., dated 29th June 1893, the excess of Rs. 280 being met from the balance available for unforeseen works of the Kistna Delta system, which will then be reduced to Rs. 10,492.

Capital expenditure not charged to Revenue.
49. Irrigation.
Kistna Delta System.
Eastern Section.
I. Works.
Masulipatam Canal.
3. Distributaries.
3. Works.
Medur Channel.

	RS.
Constructing Drop No. 2 with bridge at 5 miles 1½ furlongs, estimate ...	990

2. This sanction is registered as No. 121 I. of 1895–96.

(True Extract.)

(Signed) R. R. E. Drake-Brockman, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle, with one enclosure.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 31*st*.

Recd. *Encl.*

G.O. No. 899 I., 31st Oct. 1895.

OCTOBER.

Medur Channel

Revised estimate of Rs. 990 for constructing Drop No. 2 with bridge at 5 miles $1\frac{1}{2}$ furlongs of —, Masulipatam canal, Kistna Eastern delta, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From Lieutenant-Colonel D. McNEIL CAMPBELL, R.E., Superintending Engineer, III Circle, to the Chief Engineer for Irrigation, dated Bellary, 23rd October 1895, No. 2317.

The Executive Engineer, Kurnool division, having now asked for the transfer of Rs. 1,000 from Yerragundapalaiyam tank to Machaveerappa tank of Indreswaram, I have the honour to request that you will be good enough not to surrender the amount, viz., Rs. 1,000, from the former tank proposed in this office No. 2226, dated 12th October 1895.

2. If the amount has already been surrendered, I request that the amount now asked for may be allotted from the reserve grant at the disposal of Government.

ORDER—No. 900 I., dated 31st October 1895.

The following transfers of funds are sanctioned :—

Irrigation.
43. Minor Works and Navigation.

From Agricultural Works.	RS.	*To* Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D. Ordinary Works. Kurnool Division.	RS.
Reserve—			
Repairs	1,000	Major Original Works	1,000
Establishment	230	Establishment	230
Tools and plant	15	Tools and plant	15
Total ...	1,245	Total ...	1,245

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, III Circle.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 31st.

Recd. *Encl.*

G.O. No. 900 I., 31st Oct. 1895.

OCTOBER.

Funds

Certain transfers of — for works in Kurnool division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

From Lieutenant-Colonel C. C. RAWSON, R.E., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 19th October 1895, No. 321 E.I.

Under India Code, volume I, chapter IX, paragraph 79, I have the honour to request that sanction may be accorded to the construction of a dividing dam in the Iyengar channel below the syphon sluice over Ooppanar, south of Vellar, near Porto Novo, in South Arcot division, partly from funds contributed by the interested ryot and partly from Public Works funds. The interested ryot has agreed to pay Rs. 47 being two-thirds of the estimated cost (Rs. 55) inclusive of centage charges for establishment and tools and plant.

ORDER—No. 901 I., dated 31st October 1895.

The execution by the Public Works Department of the work referred to is sanctioned.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, V Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 31st.

Recd. *Encl.*

G.O. No. 901 I., 31st Oct. 1895.

OCTOBER.

Dam

The execution by the Public Works Department of the contribution work of constructing a dividing — in the Iyengar channel below the syphon sluice over Ooppanar, south of Vellar, near Porto Novo, in South Arcot division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From W. HUGHES, Esq., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 24th October 1895, No. 661 M.D.

In reference to your Memo. No. VI/8 M.D., dated 20th February 1895, approving of the proposals made in paragraph 4 of my letter, No. 1339 M.D., dated 12th idem, I have the honour to submit, for your approval and sanction, a fresh estimate amounting to Rs. 2,570 for the diversion of the Viravanaur river above No. 51, Thottian anicut, in the Periyakulam taluk of the Madura district.

2. The work has been put in hand in anticipation of sanction being urgent; the estimate has been countersigned by the Collector of the district.

No. 200 I.

Submitted to Government. The amount of the estimate has been increased in this office from Rs. 2,570 to Rs. 2,580, as no provision was made by the Superintending Engineer for demarcating the land to be taken up for the diversion.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

29th October 1895.

ORDER—No. 904 I., dated 31st October 1895.

The following estimate is sanctioned:—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which neither Capital nor Revenue Accounts are kept, P.W.D.
Original Works.
Madura Division.
Diversion of Viravanaur river above No. 51, Thottian Anicut.

	RS.
Estimate	2,580

2. This sanction is registered as No. 122 I. of 1895–96.

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, VI Circle, with four enclosures.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 31*st*.

Recd. *Encl.*

G.O. No. 904 I., 31st Oct. 1895.

OCTOBER.

Viravanaur River

Estimate of Rs. 2,580 for diversion of — above No. 51, Thottian anicut, Madura division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers:—

From A. H. GARRETT, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 22nd September 1895, No. 1421 G.D.

I have the honour to request that you will be good enough to arrange for an allotment of Rs. 10,000 during the current official year under "open Capital Account, 49. Irrigation works," for raising the crest of Gódávari anicut for which an estimate was submitted with my letter No. 1300 G.D., dated the 9th instant.

2. The Executive Engineer states that the above amount is required if the estimate is sanctioned soon.

No. 180 I.

Note by the Chief Engineer for Irrigation.

With his letter No. 1300 G.D., dated 9th September 1895, the Superintending Engineer, I Circle, submitted an estimate, amounting to Rs. 1,08,000, for *works* alone, for raising the crest of all four branches of the Gódávari anicut from 38 feet above M.S.L. to 40 feet above the same level. The ultimate area of irrigation in the Gódávari delta was increased last year from 640,000 to 675,000 acres; but a further increase being considered feasible, it is proposed to raise the anicut by two feet in order to render scarcity of water, in future, improbable. An experimental length of 50 feet of the crest of the anicut was raised during the current year, and so soon as the suitability of the section adopted has been ascertained, the whole length will be raised by one foot, leaving the remaining foot to be raised during the following year. The estimate is now under scrutiny in this office and will, in due course, be submitted to Government for sanction under the open Canal Capital Account rules. As the work would be most highly beneficial and very remunerative, it is recommended that an application be made to the Government of India for an allotment of Rs. 10,000, or Rs. 12,300 including establishment, for the current year under "49. Capital expenditure not charged to Revenue" for expenditure on the collection of materials for the proposed work in view to advantage being taken of the next working season.

2. An application in the form prescribed for additional allotments is appended.

(Signed) R. R. E. DRAKE-BROCKMAN, Col., R.E.,
Chief Engineer for Irrigation.

8th August 1895.

ENCLOSURE.

STATEMENT to accompany application for an additional grant of Rs. 12,300 under 49. Capital expenditure not charged to Revenue for expenditure on the Gódávari Delta system during 1895–96.

Amount of expenditure in the year for which sanction is asked.	Major and Minor heads under which expenditure will fall, with the amounts of sanctioned grants under each.	Probable expenditure in the whole year under the grants mentioned in column 2 if the expenditure in column 1 is sanctioned.	Major and Minor heads under which it is proposed to reduce the grants with the sanctioned grants under each.	Probable expenditure in the year under the heads mentioned in column 4.	Amount by which it is proposed to reduce the grants under the heads mentioned in column 4.	Explanation, if no re-appropriation is considered possible; in such cases the urgency and necessity for the outlay must also be explained.
1	2	3	4	5	6	7
Rs. 12,300	49. *Capital Expenditure not charged to Revenue.* Gódávari Delta System. Rs. 13,000	Rs. 25,300	*Nil.*	*Nil.*	*Nil.*	The additional grant is required for the collection of materials for raising the crest of the Gódávari anicut in view to advantage being taken of the next working season.

ORDER—No. 905 I., dated 31st October 1895.

The collection of materials during the current year for the proposed raising of the crest of the Gódávari anicut is approved.

2. Ordered that a copy of these Proceedings be forwarded to the Government of India with a request that early sanction may be accorded to the additional allotment of Rs. 12,300 required during the current year under "49. Capital expenditure not charged to Revenue."

[Here enter No. 906 I., dated 31st October 1895.]

(True Extract.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, I Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

ENDORSEMENT—No. 906 I., dated 31st October 1895.

Forwarded.

(By order.)

(Signed) R. R. E. DRAKE-BROCKMAN, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Secretary to the Government of India,
Public Works Department.

IRRIGATION.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated October, 31*st.*

Recd. *Encl.*

G.O. Nos. 905, 906 I., 31st Oct. 1895.

OCTOBER.

Godavari Anicut

Forwarding Proceedings approving the collection of materials during the current year for the proposed raising of the crest of the —, and requesting sanction to an additional allotment of Rs. 12,300 under "49. Capital expenditure not charged to Revenue."

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

TABULAR STATEMENT OF MISCELLANEOUS PROCEEDINGS AND MATTERS OF ROUTINE,

IRRIGATION,

FOR THE MONTH OF OCTOBER 1895.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Velur Hissa tank, North Arcot district.—Proceedings, Revenue Department, recording Board's Proceedings submitting the Collector's report regarding the lowering of the weir of the —, communicated to Superintending Engineer, IV Circle, with remark.	1st Oct. 1895, No. 805 I.	22nd Dec. 1894, No. 1061 I.
Land.—Notification for the acquisition of — required for a rest-house at Vadali, Kistna district, ordered to be published in the *Fort St. George Gazette.*	3rd do. do. No. 811 I.	9th Jan. 1894, No. 9 I. 29th Aug. 1895, No. 2642 C.
Cart-track over bund of the Ambavaram tank, Cuddapah division.—Proceedings, Revenue Department, communicating to the Board of Revenue Public Works Proceedings concurring in the opinion of Superintending Engineer, III Circle, that the cost of the — should be borne by this department, recorded.	4th do. do. No. 814 I.	7th Sept. 1895, No. 723 I.
Periyár Project.—E. Form Progress Reports of No. I Periyár and Madura (No. II Periyár) divisions for August 1895, ordered to be forwarded to the Government of India.	5th do. do. No. 816 I.	......
Forwarded	5th do. do. No. 817 I.	......
Funds.—Proceedings, Revenue Department, sanctioning the proposals for the utilization of the surplus balances under the Wyakondan and the Ponnéri channels in Trichinopoly district, communicated to Superintending Engineer, VI Circle.	10th do. do. No. 828 I.	......
Suit.—Proceedings of the Board of Revenue (Land Revenue) sanctioning the proposed compromise of original — No. 540 of 1893 on the file of the District Munsif's Court, Chingleput, regarding repairs to the Atlumanam tank and its supply channel, recorded.	10th do. do. No. 829 I.	......

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Unauthorised appropriations.—Orders on statement of — made during August 1895 under Irrigation, 43. Minor Works and Navigation.	11th Oct. 1895, No. 830 I.	20th Sept. 1895, No. 774 I. 11th Sept. 1895, Nos. 737–38 I. 20th Aug. 1895, No. 673 I. 1st Aug. 1895, No. 605 I.
The above forwarded to the Accountant-General, Public Works Department.	11th do. do. No. 831 I.	......
Land.—Revised notification for the acquisition of — required for the Ponnkumad right and left side channels, Kistna district, ordered to be published in the *Fort St. George Gazette.*	14th do. do. No. 833 I.	......
Water-supply.—Proceedings, Local and Municipal Department, communicating to the Municipal Council, Periyakulam, the Superintending Engineer's letter reporting the action taken in regard to the — of the town, communicated to Superintending Engineer, VI Circle.	14th do. do. No. 834 I.	......
Articles destroyed when the Donthulapalli Rest-house in Cuddapah Division was burnt down.—The write-off of certain —, sanctioned.	14th do. do. No. 835 I.	......
Land.—Notification for the acquisition of — required for works in connection with the Varaha river, Vizagapatam district, ordered to be published in the *Fort St. George Gazette.*	15th do. do. No. 836 I.	......
Land.—Notification for the acquisition of — required for the Atchavaram affluent, Kistna district, ordered to be published in the *Fort St. George Gazette.*	15th do. do. No. 837 I.	......
Land.—Notifications for the acquisition of — required in connection with the Cheyár anicut system, ordered to be published in the *Fort St. George Gazette.*	15th do. do. No. 838 I.	6th Oct. 1893, No. 855 I.
Land.—Notification for the acquisition of — required for the Eastern channel, 3rd Section, Sangam anicut system, ordered to be published in the *Fort St. George Gazette.*	15th do. do. No. 839 I.	23rd July 1887, No. 440 I.
Land.—Notifications for the acquisition of — required for works connected with the Kistna delta system, ordered to be published in the *Fort St. George Gazette.*	15th do. do. No. 840 I.	......
Re-Settlement.—Proceedings, Revenue Department, passing orders on Board's Proceedings submitting to Government proposals for the — of Gódávari district, communicated to Superintending Engineers, I and II Circles.	16th do. do. No. 841 I.	......
Objectionable items statement.—Orders on — of the II Circle for June 1895.	16th do. do. No. 842 I.	20th Sept. 1895, No. 775 I. 22nd Aug. 1895, No. 675 I.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Objectionable items statement.—Orders on — of the I Circle for June 1895.	16th Oct. 1895, No. 843 I.	20th Sept. 1895, No. 776 I. 26th Aug. 1895, No. 683 I.
Heavy engine-oil.—The local purchase of — for the Kurnool-Cuddapah canal, sanctioned.	18th do. do. No. 848 I.	......
Measuring officer.—Proceedings, Revenue Department, sanctioning the further retention for six months of a — in Nellore, communicated to Superintending Engineer, II Circle.	19th do. do. No. 849 I.	13th Sept. 1895, No. 2744 C.
Funds.—The sum of Rs. 7,824 not required for expenditure during the current year on the Cheyár anicut system, Capital Account, resumed and credited to reserve under "43. Agricultural works."	19th do. do. No. 850 I.	12th Sept. 1895, No. 742 I.
Statement of objectionable items.—Orders on — in the accounts of Executive Engineers remaining unremedied to end of June 1895, V Circle.	23rd do. do. No. 853 I.	20th Sept. 1895, No. 777 I. 14th Aug. 1895, No. 655 I. 12th June 1895, No. 484 I. 13th May 1895, No. 406 I. 10th April 1895, No. 334 I. 12th March 1895, No. 244 I.
Statement of objectionable items.—Orders on — in the accounts of Executive Engineers remaining unremedied to end of June 1895, VI Circle.	23rd do. do. No. 854 I.	26th Sept. 1895, No. 791 I.
Cyclone.—Endorsement from Superintending Engineer, I Circle, forwarding letter from the Executive Engineer, Gódávari Western Division, reporting that a — passed through the division accompanied by a heavy rainfall and consequent damages, recorded with remark.	23rd do. do. No. 855 I.	......
Land.—Notification for the acquisition of — required for extending the Oottur right side channel, Gódávari district, ordered to be published in the *Fort St. George Gazette.*	24th do. do. No. 857 I.	25th Jan. 1895, No. 68 I.
Land.—Notification for the acquisition of — required for closing breaches in the Pedda Uppalam river channel, Vizagapatam district, ordered to be published in the *Fort St. George Gazette.*	24th do. do. No. 859 I.	......
Land.—Notification for the acquisition of — for quarrying stone required for raising the anicut, Gódávari district, ordered to be published in the *Fort St. George Gazette.*	24th do. do. No. 860 I.	......
Objectionable items statement.—Orders on — of III Circle for June 1895.	24th do. do. No. 861 I.	20th Sept. 1895, No. 774 I.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Objectionable items statement.—Orders on — of IV Circle for June 1895.	24th Oct. 1895, No. 862 I.	24th Sept. 1895, No. 787 I. 20th Aug. 1895, No. 672 I. 6th Aug. 1895, No. 619 I. 19th June 1895, No. 496 I.
Land.—Notification for the acquisition of — required for widening and banking the Old Coleroon in South Arcot district, ordered to be published in the *Fort St. George Gazette.*	24th do. do. No. 863 I.	8th Oct. 1892, No. 835 I.
Floods.—Proceedings, Revenue Department, passing orders on the Honourable Mr. Sturrock's report regarding the damage caused by the recent — in the neighbourhood of Ellore and Bezwada, communicated to Superintending Engineers, I and II Circles.	24th do. do. No. 869 I.	.. ...
Funds.—Certain transfers of — for minor works, Revenue Department, Bellary division, sanctioned.	25th do. do. No. 870 I.	......
Land.—Notifications for the acquisition of — required in connection with the Pedalanka channel project, Kistna district, ordered to be published in the *Fort St. George Gazette.*	25th do. do. No. 871 I.	......
Objectionable items statement.—Orders on the — of No. I Periyár division for July 1895.	28th do. do. No. 875 I.	13th July 1895, No. 557 I. 20th Sept. 1895, No. 763 I.
Erratum.—Ordered that an — to the notification for acquiring land in connection with the water spread of Red Hills tank in Ponnéri taluk, Chingleput district, that was published in the *Fort St. George Gazette* of 6th August 1895 be published in that Gazette.	28th do. do. No. 876 I.	30th July 1895, No. 592 I.
Land.—Notification for the acquisition of — required for the A. Branch of the Ichchhápuram channel, Ganjám district, ordered to be published in the *Fort St. George Gazette.*	29th do. do. No. 887 I.	10th Jan. 1894, No. 13 I.
Periyár project.—E. Form Progress reports of No. I Periyár and (No. II Periyár), Madura divisions, for September 1895, ordered to be forwarded to the Government of India.	30th do. do. No. 892 I.	5th Oct. 1895, Nos. 816-17 I.
Forwarded	30th do. do. No. 893 I.	......
Dumagudem head lock.—The proposal of Superintending Engineer, I Circle, for special timbers being ordered for proceeding with new gates for —, approved.	30th do. do. No. 894 I.	......
Unauthorised appropriations.—Orders on statement of — made during September 1895, under Irrigation, 43, Minor works and Navigation.	30th do. do. No. 895 I.	11th Oct. 1895, Nos. 830-31 I.
The above forwarded to the Accountant-General, Public Works Department.	30th do. do. No. 896 I.	......

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Land.—Notifications for the acquisition of — required for works in connection with the Kistna delta system, ordered to be published in the *Fort St. George Gazette.*	30th Oct. 1895, No. 897 I.	......
Land.—Notifications for the acquisition of — required for works in connection with the Gódávari delta system, ordered to be published in the *Fort St. George Gazette.*	30th do. do. No. 898 I.	......
Periyakulam Municipal report.—Proceedings, Local and Municipal Department, reviewing the — for 1894-95, recorded with reference to G.O. No. 834 I., dated 14th October 1895.	31st do. do. No. 902 I.	......
Water-rate.—Proceedings, Revenue Department, agreeing in the Board's view that portion of the Gódávari Collector's circular which relates to the levy of — in cases where no crop is raised subsequent to watering should be cancelled, and presuming the practice to be to charge in such cases the lower water-rate fixed for dry crops, communicated to Superintending Engineers, I and II Circles.	31st do. do. No. 903 I.	17th May 1895, No. 180 D.